


# Flowline Closure Checklist

## COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional Attachments:		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure
Site Name & COGCC Facility Number: Stroh H12-22		Date: 10/5/2023				Remediation Project #: 28402		
Associated Wells:		Age of Site:				Number of Photos Attached: 1		
Starting point: (GPS coordinates and descriptions) 40.240489/ -104.606953								
End point: (GPS coordinates and descriptions) 40.242316/ -104.608422								
USCS Soil Type: SW					Estimated Depth to Groundwater: >4'			
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)  None Observed								
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)  None Observed								
<b>Flowlines</b>								
Flowline type	Oil / Gas / Water							
Depth	4'							
Age								
Length	1008'							
Construction Material	steel							
Were flowlines pulled?	no							
Visual Integrity of lines	NA							
Visual impacts if trenched	None observed							
PID Readings if trenched	1.0							
Sample taken? Location/Sample ID#	yes, see below							
Photo Number(s)	1							
Other observations regarding on location flowlines: A sample was taken at the wellhead (FL01-A @4'). The separator was sampled during the decommissioning of the associated facility, Stroh D07-31 (REM# 30666). Flowline was ABIP due to field constraints (Form 44 abandonment #403628340).								
<b>Summary</b>								
Was impacted soil identified? <span style="background-color: yellow;">No</span>								
Total number of samples field screened: 1					Total number of samples collected: 1			
Highest PID Reading: 1.0					Total number of samples submitted to lab for analysis: 1			
If more than 10 cubic yards of impacted soil were observed:								
Vertical extent:					Estimated spill volume:			
Lateral extent:					Volume of soil removed:			
Is additional investigation required?								
Was groundwater encountered during the investigation? <span style="background-color: yellow;">No</span>								
Measured depth to groundwater:					Was remedial groundwater removal conducted?			
Date Groundwater was encountered:					Commencement date of removal:			
Sheen on groundwater?					Volume of groundwater removed prior to sampling:			
Free product observed?					Volume of groundwater removed post sampling:			
Total number of samples collected:					Total Volume of groundwater removed:			
Total number of samples submitted to lab for analysis:								

## Photographic Log

										
						Equipment ID: FL01-A@4'		Equipment Type: Flowline		
						Material: Steel	Volume:	Contents: Oil/Gas/Water		
						Notes/Conditions: Facing West				
			Equipment ID:			Equipment Type:				
			Material:		Volume:		Contents:			
Notes/Conditions:										

**TABLE 1**  
**SOIL SAMPLE LOCATIONS**  
**NOBLE ENERGY, INC. - STROH H12-22**

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude <sup>1</sup>	Longitude	PDOP
FL01-A@4'	10/05/23	1.0	No Staining	No Odor	Lab	40.240490	-104.606954	1.0

Notes:

PID = Photoionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

1.) Latitude and longitude coordinates will be provided in decimal degrees with an accuracy and precision of 5 decimals of a degree using the North American Datum ("NAD") of 1983

TABLE 2  
SOIL ANALYTICAL DATA  
NOBLE ENERGY, INC. - STROH H12-22

Soil Sample ID	Date	<sup>1</sup> Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL <sup>1,2</sup>		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL <sup>1,2,3</sup>		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01-A@4'	10/05/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
SSR <sup>1,2</sup>		6 - 8.3	<6	<4mmhos/cm	2
FL01-A@4'	10/05/23	8.26	0.0174	0.212	<2.00

Sample ID	Date Sampled	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL <sup>1,2</sup>		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL <sup>1,2,3</sup>		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01-A@4'	10/05/23	0.718	67.3	<0.200	<0.30	1.81	15.6	1.75	<0.260	0.0269	7.24

Notes:

1. Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2. Soil Screening Levels (SSL) and Soil Suitability for Reclamation (SSR) standards referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

ECMC = Energy and Carbon Management Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millmhos per centimeter

mg/L = Milligrams per liter

< = Analytical result is less than the indicated laboratory reporting limit

1,2,4 - TMB = 1,2,4 Trimethylbenzene

1,3,5 - TMB = 1,3,5 Trimethylbenzene

Benz(a) = Benz(a)anthracene

Benzo(b) = Benzo(b)fluoranthene

Benzo(k) = Benzo(k)fluoranthene

Benzo(a) = Benzo(a)pyrene

A,H = Dibenzo(a,h)anthracene

1,2,3-CD = Indeno(1,2,3-cd)pyrene


1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

Highlighted results are equal to or exceed the ECMC Table 915-1 standard





DATE:	11/01/2023	 <div>Tasman Geosciences, Inc. 6855 W 119<sup>th</sup> Avenue Broomfield, CO 80020</div>	Noble Energy, Inc. – DJ Basin Stroh H12-22 SENE, Section 12, Township 3 North, Range 65 West Weld County, Colorado	Flowline Closure & Soil Analytical Results Map (10/05/2023)	FIGURE 1
DESIGNED BY:	JW				
DRAWN BY:	EH				



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 31, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Stroh H12-22

Work Order #2310107

Enclosed are the results of analyses for samples received by Summit Scientific on 10/05/23 17:45. 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 - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-A@4'	2310107-01	Soil	10/05/23 12:01	10/05/23 17:45

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.*



# SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2310107	

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: Stroh H12-22	
City/State/Zip: Broomfield, CO 80020		AFE#: UWRWE-A3217-ABN	
Phone: 303-903-5168	Project Name: Stroh H12-22	PO/Billing Codes:	
Sampler Name: Dalton Hagen	Project Number:	Contact: Miguel Barron	

				Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS	Metals - 915	HOLD	
1	FLØ1-Aeu	10/5/23	1201	3			X			X			X	X	X	X	X	X		pH, EC, SAR by saturated paste
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 10/5/23 1500	Received by: Tasman Lockbox	Date/Time: 10/5/23 1500	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lockbox	Date/Time: 1745 10523	Received by: 	Date/Time: 10523 1745	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 4.7	Corrected Temperature 8	IR gun #: 1	HNO3 lot #:			



S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2310107Client: Noble Frisman Client Project ID: Stroh H12-22Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ ☐ ☐ ☐ ☐ Airbill #: \_\_\_\_\_Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 11.7Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on 20e
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

Custodian Printed Name

Date/Time

AS

10/5/23



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

**FL01-A@4'**  
**2310107-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/05/23 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ0255	10/06/23	10/07/23	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: **10/05/23 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0405	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0390	97.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0376	94.0 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/05/23 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0261	10/06/23	10/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/05/23 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.53	76.2 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

**FL01-A@4'**  
**2310107-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/05/23 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0317	10/09/23	10/10/23	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: **10/05/23 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0303	91.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0245	73.4 %	40-150		"	"	"	"	

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

Date Sampled: **10/05/23 12:01**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0362	10/10/23	10/11/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/05/23 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

Summit Scientific



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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

**FL01-A@4'**  
**2310107-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.718	0.200	mg/kg dry	1	BGJ0384	10/10/23	10/11/23	EPA 6020B
Barium	67.3	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	1.81	0.400	"	"	"	"	"	"
Lead	15.6	0.200	"	"	"	"	"	"
Nickel	1.75	0.400	"	"	"	"	"	"
Silver	0.0269	0.0200	"	"	"	"	"	"
Zinc	7.24	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/05/23 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0353	10/09/23	10/10/23	EPA 7196A	

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

Date Sampled: **10/05/23 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	256	0.0500	mg/L dry	1	BGJ0464	10/11/23	10/13/23	EPA 6020B	
Magnesium	31.7	0.0500	"	"	"	"	"	"	
Sodium	1.11	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/05/23 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0174	0.00100	units	1	BGJ0584	10/13/23	10/13/23	Calculation	

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

Summit Scientific

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





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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

**FL01-A@4'**  
**2310107-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/05/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	92.0			%	1	BGJ0528	10/12/23	10/12/23	Calculation	

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

Date Sampled: **10/05/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.212	0.0100		mmhos/cm	1	BGJ0508	10/12/23	10/12/23	EPA 120.1	

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

**FL01-A@4'**  
**2310107-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/05/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>pH</b>	<b>8.26</b>			pH Units	1	BGJ0694	10/12/23	10/18/23	EPA 9045D	

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

## 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 BGJ0255 - EPA 5030 Soil MS

##### Blank (BGJ0255-BLK1)

Prepared: 10/06/23 Analyzed: 10/07/23

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	0.0367		"	0.0400		91.6	50-150			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.0	50-150			

##### LCS (BGJ0255-BS1)

Prepared: 10/06/23 Analyzed: 10/07/23

Benzene	0.0841	0.0020	mg/kg	0.100		84.1	70-130			
Toluene	0.0866	0.0050	"	0.100		86.6	70-130			
Ethylbenzene	0.0890	0.0050	"	0.100		89.0	70-130			
m,p-Xylene	0.178	0.010	"	0.200		89.1	70-130			
o-Xylene	0.0864	0.0050	"	0.100		86.4	70-130			
1,2,4-Trimethylbenzene	0.0859	0.0050	"	0.100		85.9	70-130			
1,3,5-Trimethylbenzene	0.0877	0.0050	"	0.100		87.7	70-130			
Naphthalene	0.0965	0.0038	"	0.100		96.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400		95.3	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	50-150			

##### Matrix Spike (BGJ0255-MS1)

Source: 2310106-01

Prepared: 10/06/23 Analyzed: 10/07/23

Benzene	0.0790	0.0020	mg/kg	0.100	ND	79.0	70-130			
Toluene	0.0787	0.0050	"	0.100	ND	78.7	70-130			
Ethylbenzene	0.0760	0.0050	"	0.100	ND	76.0	70-130			
m,p-Xylene	0.150	0.010	"	0.200	ND	74.8	70-130			
o-Xylene	0.0748	0.0050	"	0.100	ND	74.8	70-130			
1,2,4-Trimethylbenzene	0.0992	0.0050	"	0.100	ND	99.2	70-130			
1,3,5-Trimethylbenzene	0.0710	0.0050	"	0.100	ND	71.0	70-130			
Naphthalene	0.0976	0.0038	"	0.100	ND	97.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	50-150			

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

**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 BGJ0255 - EPA 5030 Soil MS**

Matrix Spike Dup (BGJ0255-MSD1)		Source: 2310106-01			Prepared: 10/06/23 Analyzed: 10/07/23					
Benzene	0.0735	0.0020	mg/kg	0.100	ND	73.5	70-130	7.12	30	
Toluene	0.0727	0.0050	"	0.100	ND	72.7	70-130	7.89	30	
Ethylbenzene	0.0748	0.0050	"	0.100	ND	74.8	70-130	1.59	30	
m,p-Xylene	0.149	0.010	"	0.200	ND	74.7	70-130	0.0803	30	
o-Xylene	0.0741	0.0050	"	0.100	ND	74.1	70-130	0.967	30	
1,2,4-Trimethylbenzene	0.0995	0.0050	"	0.100	ND	99.5	70-130	0.332	30	
1,3,5-Trimethylbenzene	0.0713	0.0050	"	0.100	ND	71.3	70-130	0.380	30	
Naphthalene	0.0927	0.0038	"	0.100	ND	92.7	70-130	5.14	30	
Surrogate: 1,2-Dichloroethane-d4		0.0408	"	0.0400		102	50-150			
Surrogate: Toluene-d8		0.0391	"	0.0400		97.7	50-150			
Surrogate: 4-Bromofluorobenzene		0.0389	"	0.0400		97.4	50-150			

Summit Scientific

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





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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

**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 BGJ0261 - EPA 3550A**

**Blank (BGJ0261-BLK1)**

Prepared: 10/06/23 Analyzed: 10/07/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.9		"	12.5		111	30-150			

**LCS (BGJ0261-BS1)**

Prepared: 10/06/23 Analyzed: 10/07/23

C10-C28 (DRO)	526	50	mg/kg	500		105	70-130			
Surrogate: o-Terphenyl	14.7		"	12.5		118	30-150			

**Matrix Spike (BGJ0261-MS1)**

Source: 2310106-01

Prepared: 10/06/23 Analyzed: 10/07/23

C10-C28 (DRO)	469	50	mg/kg	500	33.9	87.0	70-130			
Surrogate: o-Terphenyl	10.8		"	12.5		86.4	30-150			

**Matrix Spike Dup (BGJ0261-MSD1)**

Source: 2310106-01

Prepared: 10/06/23 Analyzed: 10/07/23

C10-C28 (DRO)	495	50	mg/kg	500	33.9	92.3	70-130	5.42	20	
Surrogate: o-Terphenyl	11.2		"	12.5		89.7	30-150			

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGJ0317 - EPA 5030 Soil MS

##### Blank (BGJ0317-BLK1)

Prepared & Analyzed: 10/09/23

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	0.0339		"	0.0333		102	40-150			
Surrogate: Fluoranthene-d10	0.0327		"	0.0333		98.2	40-150			

##### LCS (BGJ0317-BS1)

Prepared & Analyzed: 10/09/23

Acenaphthene	0.0330	0.00500	mg/kg	0.0333	99.1	31-137
Anthracene	0.0320	0.00500	"	0.0333	95.9	30-120
Benzo (a) anthracene	0.0239	0.00500	"	0.0333	71.7	30-120
Benzo (a) pyrene	0.0270	0.00500	"	0.0333	80.9	30-120
Benzo (b) fluoranthene	0.0299	0.00500	"	0.0333	89.8	30-120
Benzo (k) fluoranthene	0.0324	0.00500	"	0.0333	97.2	30-120
Chrysene	0.0312	0.00500	"	0.0333	93.5	30-120
Dibenz (a,h) anthracene	0.0257	0.00500	"	0.0333	77.2	30-120
Fluoranthene	0.0336	0.00500	"	0.0333	101	30-120
Fluorene	0.0341	0.00500	"	0.0333	102	30-120
Indeno (1,2,3-cd) pyrene	0.0342	0.00500	"	0.0333	102	30-120
Pyrene	0.0354	0.00500	"	0.0333	106	35-142
1-Methylnaphthalene	0.0283	0.00500	"	0.0333	84.8	35-142
2-Methylnaphthalene	0.0327	0.00500	"	0.0333	98.0	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0323		"	0.0333	96.9	40-150
Surrogate: Fluoranthene-d10	0.0324		"	0.0333	97.3	40-150

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGJ0317 - EPA 5030 Soil MS

##### Matrix Spike (BGJ0317-MS1)

Source: 2310052-01

Prepared & Analyzed: 10/09/23

Acenaphthene	0.0193	0.00500	mg/kg	0.0333	ND	57.9	31-137		
Anthracene	0.0176	0.00500	"	0.0333	ND	52.8	30-120		
Benzo (a) anthracene	0.0219	0.00500	"	0.0333	ND	65.6	30-120		
Benzo (a) pyrene	0.0168	0.00500	"	0.0333	ND	50.4	30-120		
Benzo (b) fluoranthene	0.0175	0.00500	"	0.0333	ND	52.6	30-120		
Benzo (k) fluoranthene	0.0195	0.00500	"	0.0333	ND	58.6	30-120		
Chrysene	0.0191	0.00500	"	0.0333	ND	57.4	30-120		
Dibenz (a,h) anthracene	0.0152	0.00500	"	0.0333	ND	45.4	30-120		
Fluoranthene	0.0195	0.00500	"	0.0333	ND	58.6	30-120		
Fluorene	0.0174	0.00500	"	0.0333	ND	52.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0150	0.00500	"	0.0333	ND	44.9	30-120		
Pyrene	0.0225	0.00500	"	0.0333	ND	67.4	35-142		
1-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.3	15-130		
2-Methylnaphthalene	0.0177	0.00500	"	0.0333	ND	53.0	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0205		"	0.0333		61.5	40-150		
Surrogate: Fluoranthene-d10	0.0192		"	0.0333		57.5	40-150		

##### Matrix Spike Dup (BGJ0317-MSD1)

Source: 2310052-01

Prepared & Analyzed: 10/09/23

Acenaphthene	0.0179	0.00500	mg/kg	0.0333	ND	53.8	31-137	7.27	30
Anthracene	0.0178	0.00500	"	0.0333	ND	53.5	30-120	1.38	30
Benzo (a) anthracene	0.0176	0.00500	"	0.0333	ND	52.8	30-120	21.6	30
Benzo (a) pyrene	0.0143	0.00500	"	0.0333	ND	43.0	30-120	15.9	30
Benzo (b) fluoranthene	0.0139	0.00500	"	0.0333	ND	41.8	30-120	22.9	30
Benzo (k) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.4	30-120	17.0	30
Chrysene	0.0166	0.00500	"	0.0333	ND	49.8	30-120	14.2	30
Dibenz (a,h) anthracene	0.0170	0.00500	"	0.0333	ND	50.9	30-120	11.4	30
Fluoranthene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	2.80	30
Fluorene	0.0160	0.00500	"	0.0333	ND	47.9	30-120	8.38	30
Indeno (1,2,3-cd) pyrene	0.0164	0.00500	"	0.0333	ND	49.3	30-120	9.27	30
Pyrene	0.0196	0.00500	"	0.0333	ND	58.9	35-142	13.4	30
1-Methylnaphthalene	0.0159	0.00500	"	0.0333	ND	47.7	15-130	7.43	50
2-Methylnaphthalene	0.0175	0.00500	"	0.0333	ND	52.6	15-130	0.837	50
Surrogate: 2-Methylnaphthalene-d10	0.0181		"	0.0333		54.3	40-150		
Surrogate: Fluoranthene-d10	0.0173		"	0.0333		51.9	40-150		

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

**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 BGJ0362 - EPA 3050B**

**Blank (BGJ0362-BLK1)**

Prepared: 10/10/23 Analyzed: 10/11/23

Boron ND 2.00 mg/L

**LCS (BGJ0362-BS1)**

Prepared: 10/10/23 Analyzed: 10/11/23

Boron 4.60 2.00 mg/L 5.00 91.9 80-120

**Duplicate (BGJ0362-DUP1)**

**Source: 2310062-01**

Prepared: 10/10/23 Analyzed: 10/11/23

Boron 0.345 2.00 mg/L 0.394 13.1 20

**Matrix Spike (BGJ0362-MS1)**

**Source: 2310062-01**

Prepared: 10/10/23 Analyzed: 10/11/23

Boron 4.34 2.00 mg/L 5.00 0.394 78.9 75-125

**Matrix Spike Dup (BGJ0362-MSD1)**

**Source: 2310062-01**

Prepared: 10/10/23 Analyzed: 10/11/23

Boron 4.69 2.00 mg/L 5.00 0.394 85.9 75-125 7.74 25

Summit Scientific

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





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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

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

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

**Batch BGJ0384 - EPA 3050B**

**Blank (BGJ0384-BLK1)**

Prepared: 10/10/23 Analyzed: 10/11/23

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 (BGJ0384-BS1)**

Prepared: 10/10/23 Analyzed: 10/11/23

Arsenic	46.5	0.200	mg/kg wet	40.0	116	80-120
Barium	38.3	0.400	"	40.0	95.8	80-120
Cadmium	2.00	0.200	"	2.00	100	80-120
Copper	46.0	0.400	"	40.0	115	80-120
Lead	19.4	0.200	"	20.0	96.8	80-120
Nickel	45.8	0.400	"	40.0	115	80-120
Silver	1.91	0.0200	"	2.00	95.7	80-120
Zinc	45.2	0.400	"	40.0	113	80-120
Selenium	4.08	0.260	"	4.00	102	80-120


**Duplicate (BGJ0384-DUP1)**

Source: 2310067-01

Prepared: 10/10/23 Analyzed: 10/11/23

Arsenic	0.742	0.200	mg/kg dry	0.803	7.87	20
Barium	1180	0.400	"	1160	2.06	20
Cadmium	0.380	0.200	"	0.369	2.87	20
Copper	1.87	0.400	"	2.08	10.9	20
Lead	10.4	0.200	"	12.4	17.9	20
Nickel	1.60	0.400	"	1.81	12.3	20
Silver	0.0286	0.0200	"	0.0300	4.80	20
Zinc	5.77	0.400	"	6.55	12.6	20
Selenium	0.315	0.260	"	0.317	0.741	20

Summit Scientific



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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

**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 BGJ0384 - EPA 3050B**

**Matrix Spike (BGJ0384-MS1)**

Source: 2310067-01

Prepared: 10/10/23 Analyzed: 10/11/23

Arsenic	10.0	0.200	mg/kg dry	46.8	0.803	19.6	75-125			QM-07
Barium	891	0.400	"	46.8	1160	NR	75-125			QM-07
Cadmium	2.01	0.200	"	2.34	0.369	70.1	75-125			QM-07
Copper	11.2	0.400	"	46.8	2.08	19.4	75-125			QM-07
Lead	25.7	0.200	"	23.4	12.4	56.7	75-125			QM-07
Nickel	11.0	0.400	"	46.8	1.81	19.6	75-125			QM-07
Silver	1.26	0.0200	"	2.34	0.0300	52.3	75-125			QM-07
Zinc	15.4	0.400	"	46.8	6.55	18.9	75-125			QM-07
Selenium	3.82	0.260	"	4.68	0.317	74.9	75-125			QM-07

**Matrix Spike Dup (BGJ0384-MSD1)**

Source: 2310067-01

Prepared: 10/10/23 Analyzed: 10/11/23

Arsenic	10.0	0.200	mg/kg dry	46.8	0.803	19.7	75-125	0.350	25	QM-07
Barium	872	0.400	"	46.8	1160	NR	75-125	2.09	25	QM-07
Cadmium	1.97	0.200	"	2.34	0.369	68.3	75-125	2.05	25	QM-07
Copper	11.2	0.400	"	46.8	2.08	19.5	75-125	0.390	25	QM-07
Lead	25.2	0.200	"	23.4	12.4	54.4	75-125	2.12	25	QM-07
Nickel	11.0	0.400	"	46.8	1.81	19.6	75-125	0.187	25	QM-07
Silver	1.23	0.0200	"	2.34	0.0300	51.2	75-125	2.19	25	QM-07
Zinc	15.2	0.400	"	46.8	6.55	18.5	75-125	1.24	25	QM-07
Selenium	3.97	0.260	"	4.68	0.317	78.1	75-125	3.83	25	

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

**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 BGJ0353 - 3060A Mod**

**Blank (BGJ0353-BLK1)**

Prepared: 10/09/23 Analyzed: 10/10/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGJ0353-BS1)**

Prepared: 10/09/23 Analyzed: 10/10/23

Chromium, Hexavalent 24.4 0.30 mg/kg wet 25.0 97.4 80-120

**Duplicate (BGJ0353-DUP1)**

**Source: 2310107-01**

Prepared: 10/09/23 Analyzed: 10/10/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGJ0353-MS1)**

**Source: 2310107-01**

Prepared: 10/09/23 Analyzed: 10/10/23

Chromium, Hexavalent 25.5 0.30 mg/kg dry 27.2 ND 94.0 75-125

**Matrix Spike Dup (BGJ0353-MSD1)**

**Source: 2310107-01**

Prepared: 10/09/23 Analyzed: 10/10/23

Chromium, Hexavalent 25.6 0.30 mg/kg dry 27.2 ND 94.4 75-125 0.425 20

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

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

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

**Batch BGJ0464 - General Preparation**

**Blank (BGJ0464-BLK1)**

Prepared: 10/11/23 Analyzed: 10/13/23

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

**LCS (BGJ0464-BS1)**

Prepared: 10/11/23 Analyzed: 10/13/23

Calcium	5.52	0.0500	mg/L wet	5.00	110	70-130
Magnesium	5.55	0.0500	"	5.00	111	70-130
Sodium	5.34	0.0500	"	5.00	107	70-130

Summit Scientific

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





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

Project: Noble - Stroh H12-22

Project Number: UWRWE-A3217-ABN

Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

### 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 BGJ0528 - General Preparation

##### Duplicate (BGJ0528-DUP1)

Source: 2310107-01

Prepared & Analyzed: 10/12/23

% Solids	95.7	%	92.0	3.91	20
----------	------	---	------	------	----

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

**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 BGJ0508 - General Preparation**

**Blank (BGJ0508-BLK1)**

Prepared & Analyzed: 10/12/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGJ0508-BS1)**

Prepared & Analyzed: 10/12/23

Specific Conductance (EC) 0.149 0.0100 mmhos/cm 0.150 99.4 95-105

**Duplicate (BGJ0508-DUP1)**

**Source: 2309279-01**

Prepared & Analyzed: 10/12/23

Specific Conductance (EC) 0.290 0.0100 mmhos/cm 0.290 0.00 20

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

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

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

**Batch BGJ0510 - General Preparation**

**LCS (BGJ0510-BS1)**

Prepared & Analyzed: 10/12/23

pH	9.15		pH Units	9.18		99.7	95-105
----	------	--	----------	------	--	------	--------

**Duplicate (BGJ0510-DUP1)**

**Source: 2309279-01**

Prepared & Analyzed: 10/12/23

pH	8.17		pH Units	8.17		0.00	20
----	------	--	----------	------	--	------	----

**Batch BGJ0694 - General Preparation**

**LCS (BGJ0694-BS1)**

Prepared: 10/17/23 Analyzed: 10/18/23

pH	9.17		pH Units	9.18		99.9	95-105
----	------	--	----------	------	--	------	--------

**Duplicate (BGJ0694-DUP1)**

**Source: 2309590-06**

Prepared: 10/17/23 Analyzed: 10/18/23

pH	8.57		pH Units	8.55		0.234	20
----	------	--	----------	------	--	-------	----

Summit Scientific

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



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

Project: Noble - Stroh H12-22  
Project Number: UWRWE-A3217-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 16:43

### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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