

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 13, 2025

Andy Sagen

Tasman Geosciences

4725 Independence St.

Wheat Ridge, CO 80033

RE: Noble - Hullabaloo State Y 21 Econode

Work Order #2505131

Enclosed are the results of analyses for samples received by Summit Scientific on 05/28/25 17:57. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Natalie Tessier For Paul Shrewsbury
President



Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullaballoo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0-6"	2505131-01	Soil	05/28/25 11:48	05/28/25 17:57
AST02@0-6"	2505131-02	Soil	05/28/25 11:20	05/28/25 17:57
AST03@0-6"	2505131-03	Soil	05/28/25 11:30	05/28/25 17:57
AST04@0-6"	2505131-04	Soil	05/28/25 11:12	05/28/25 17:57
AST05@0-6"	2505131-05	Soil	05/28/25 10:50	05/28/25 17:57
AST06@0-6"	2505131-06	Soil	05/28/25 10:30	05/28/25 17:57

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.

Client: Chevron/Tasman	Send Data To: Project Manager: AJ Engelhardt ^{MC} Andy Sagen	Send Invoice To: Company: Noble
Address: 4725 W. Independence Street	E-Mail: tas-chevrontas@tasman-geo.com	Project Name/Location: Hullabaloo State 421 Econode
City/State/Zip: Wheat Ridge, CO 80033	E-Mail: rbueuf27@chevron.com	AFE#:
Phone: 303-668-5268	Project Name: Hullabaloo State 421 Econode	PO/Billing Codes:
Sampler Name: Natalie Crozier	Project Number:	Contact: Dan Peterson

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil		Other	915-VOC	915-PAH	915-TPH	pH, EC, SAR	Boron	
1	AST01@0-6"	5/28/15	1148	2			X			X		X	X	X	X	X		
2	AST02@0-6"	↓	1120	↓			↓					↓	↓	↓	↓	↓		
3	AST03@0-6"	↓	1130	↓			↓					↓	↓	↓	↓	↓		
4	AST04@0-6"	↓	1112	↓			↓					↓	↓	↓	↓	↓		
5	AST05@0-6"	↓	1050	↓			↓					↓	↓	↓	↓	↓		
6	AST06@0-6"	↓	1030	↓			↓					↓	↓	↓	↓	↓		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

Relinquished by: <i>Nat Crozier</i>	Date/Time: 5/28/15 1403	Received by: Tasman Lockbox	Date/Time: 5/28/15 1403	TAT Business Days	Field DO	Notes:
Relinquished by: <i>Tasman Lockbox</i>	Date/Time: 52825 1257	Received by: <i>[Signature]</i>	Date/Time: 52825 1257	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 4.2	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:	Standard	X	Field Turb.

S₂

S2 Work Order# 2505131

Sample Receipt Checklist

Client: Noble/Tasman Client Project ID: Hullabaloo yr1 Econode

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

Matrix (Circle all that apply) Air/Soil/Water/Other Temp (°C) 4.2 Thermometer # 1

Bottle ware (Circle all that apply) Glass Jar/Voa/Amber/Poly/Other

	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.	-			
If custody seals are present, are they intact? ⁽¹⁾	-			once
Are samples due within 48 hours?		-		
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, Total Residual Chlorine (TRC)		-		
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	-			
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	-			
Were all samples received intact? ⁽¹⁾	✓			
Was adequate sample volume provided? ⁽¹⁾	✓			
Were samples provided in appropriate bottle ware?	✓			
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	✓			
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are any samples/bottles preserved (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.			✓	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Are there requested analysis that cannot be performed by S2? Note analysis in the comments column			✓	
Additional Comments (if any):				

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

Control Form #: SRC-001

AS
Custodian Printed Name

5/28/25
Date/Time



Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST01@0-6"
2505131-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/28/25 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIE0773	05/30/25	05/30/25	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: **05/28/25 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0446	111 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/28/25 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BIE0775	05/30/25	05/30/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/28/25 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.67	61.4 %		50-140		"	"	"	"	

PAH by EPA Method 8270E 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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST01@0-6"
2505131-01 (Soil)

Summit Scientific

PAH by EPA Method 8270E SIM

Date Sampled: **05/28/25 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIE0759	05/29/25	06/03/25	EPA 8270E 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: **05/28/25 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0186	55.7 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0205	61.5 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/28/25 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BIE0750	05/28/25	05/30/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/28/25 11:48**

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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST01@0-6"
2505131-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.927	0.200	mg/kg dry	1	BIE0749	05/28/25	05/29/25	EPA 6020B	
Barium	117	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.04	0.400	"	"	"	"	"	"	
Lead	5.98	0.200	"	"	"	"	"	"	
Nickel	3.45	0.400	"	"	"	"	"	"	
Silver	0.0374	0.0200	"	"	"	"	"	"	
Zinc	12.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **05/28/25 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIE0754	05/29/25	05/29/25	Hach 8000	

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

Date Sampled: **05/28/25 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	236	0.0500	mg/L dry	1	BIE0798	05/30/25	06/06/25	EPA 6020B	
Magnesium	21.1	0.0500	"	"	"	"	"	"	
Sodium	105	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/28/25 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.76	0.00100	units	1	BIF0099	06/06/25	06/06/25	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST01@0-6"
2505131-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/28/25 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	91.5			%	1	BIE0753	05/29/25	05/30/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/28/25 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.893	0.0100		mmhos/cm	1	BIE0803	05/30/25	06/02/25	EPA 120.1	

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

Date Sampled: **05/28/25 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.38			pH Units	1	BIE0801	05/30/25	06/02/25	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST02@0-6"
2505131-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BIE0773	05/30/25	05/30/25	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: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0452	113 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BIE0775	05/30/25	05/30/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.87	71.0 %	50-140		"	"	"	"	

PAH by EPA Method 8270E 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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST02@0-6"
2505131-02 (Soil)

Summit Scientific

PAH by EPA Method 8270E SIM

Date Sampled: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIE0759	05/29/25	06/03/25	EPA 8270E 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: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0245	73.4 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0249	74.8 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BIE0750	05/28/25	05/30/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/28/25 11:20**

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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST02@0-6"
2505131-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.861	0.200	mg/kg dry	1	BIE0749	05/28/25	05/29/25	EPA 6020B	
Barium	38.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.52	0.400	"	"	"	"	"	"	
Lead	2.63	0.200	"	"	"	"	"	"	
Nickel	1.70	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	7.61	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIE0754	05/29/25	05/29/25	Hach 8000	

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

Date Sampled: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	607	0.0500	mg/L dry	1	BIE0798	05/30/25	06/06/25	EPA 6020B	
Magnesium	57.2	0.0500	"	"	"	"	"	"	
Sodium	129	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.34	0.00100	units	1	BIF0099	06/06/25	06/06/25	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST02@0-6"
2505131-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.2		%	1	BIE0753	05/29/25	05/30/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.896	0.0100	mmhos/cm	1	BIE0803	05/30/25	06/02/25	EPA 120.1	

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

Date Sampled: **05/28/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.48		pH Units	1	BIE0801	05/30/25	06/02/25	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST03@0-6"
2505131-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/28/25 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIE0773	05/30/25	05/30/25	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: **05/28/25 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0458	115 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/28/25 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BIE0775	05/30/25	05/30/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/28/25 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.48	75.8 %		50-140		"	"	"	"	

PAH by EPA Method 8270E 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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST03@0-6"
2505131-03 (Soil)

Summit Scientific

PAH by EPA Method 8270E SIM

Date Sampled: **05/28/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIE0759	05/29/25	06/03/25	EPA 8270E 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: **05/28/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0221	66.2 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0233	70.0 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/28/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BIE0750	05/28/25	05/30/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/28/25 11:30**

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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST03@0-6"
2505131-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.24	0.200	mg/kg dry	1	BIE0749	05/28/25	05/29/25	EPA 6020B	
Barium	69.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.29	0.400	"	"	"	"	"	"	
Lead	3.96	0.200	"	"	"	"	"	"	
Nickel	2.32	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	10.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **05/28/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIE0754	05/29/25	05/29/25	Hach 8000	

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

Date Sampled: **05/28/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	3080	0.0500	mg/L dry	1	BIE0798	05/30/25	06/06/25	EPA 6020B	
Magnesium	258	0.0500	"	"	"	"	"	"	
Sodium	122	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/28/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.567	0.00100	units	1	BIF0099	06/06/25	06/06/25	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST03@0-6"
2505131-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/28/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.5		%	1	BIE0753	05/29/25	05/30/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/28/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.395	0.0100	mmhos/cm	1	BIE0803	05/30/25	06/02/25	EPA 120.1	

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

Date Sampled: **05/28/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.64		pH Units	1	BIE0801	05/30/25	06/02/25	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST04@0-6"
2505131-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BIE0773	05/30/25	05/30/25	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: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0442	110 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BIE0775	05/30/25	05/30/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.90	63.2 %	50-140		"	"	"	"	

PAH by EPA Method 8270E 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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST04@0-6"
2505131-04 (Soil)

Summit Scientific

PAH by EPA Method 8270E SIM

Date Sampled: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIE0759	05/29/25	06/03/25	EPA 8270E 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: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0204	61.2 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0228	68.3 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BIE0750	05/28/25	05/30/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/28/25 11:12**

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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST04@0-6"
2505131-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.80	0.200	mg/kg dry	1	BIE0749	05/28/25	05/29/25	EPA 6020B	
Barium	83.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.41	0.400	"	"	"	"	"	"	
Lead	4.15	0.200	"	"	"	"	"	"	
Nickel	3.25	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	10.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIE0754	05/29/25	05/29/25	Hach 8000	

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

Date Sampled: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	322	0.0500	mg/L dry	1	BIE0798	05/30/25	06/06/25	EPA 6020B	
Magnesium	70.5	0.0500	"	"	"	"	"	"	
Sodium	84.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.11	0.00100	units	1	BIF0099	06/06/25	06/06/25	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST04@0-6"
2505131-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.9		%	1	BIE0753	05/29/25	05/30/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.36	0.0100	mmhos/cm	1	BIE0803	05/30/25	06/02/25	EPA 120.1	

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

Date Sampled: **05/28/25 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.27		pH Units	1	BIE0801	05/30/25	06/02/25	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST05@0-6"
2505131-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/28/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BIE0773	05/30/25	05/30/25	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: **05/28/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0435	109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0404	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/28/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BIE0775	05/30/25	05/30/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/28/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.70	61.6 %	50-140		"	"	"	"	

PAH by EPA Method 8270E 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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST05@0-6"
2505131-05 (Soil)

Summit Scientific

PAH by EPA Method 8270E SIM

Date Sampled: **05/28/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIE0759	05/29/25	06/03/25	EPA 8270E 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: **05/28/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0226	67.8 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0232	69.6 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/28/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BIE0750	05/28/25	05/30/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/28/25 10:50**

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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST05@0-6"
2505131-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.972	0.200	mg/kg dry	1	BIE0749	05/28/25	05/29/25	EPA 6020B	
Barium	48.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.89	0.400	"	"	"	"	"	"	
Lead	3.03	0.200	"	"	"	"	"	"	
Nickel	1.91	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	8.85	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **05/28/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIE0754	05/29/25	05/29/25	Hach 8000	

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

Date Sampled: **05/28/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	52.6	0.0500	mg/L dry	1	BIE0798	05/30/25	06/06/25	EPA 6020B	
Magnesium	10.8	0.0500	"	"	"	"	"	"	
Sodium	27.9	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/28/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.916	0.00100	units	1	BIF0099	06/06/25	06/06/25	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST05@0-6"
2505131-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/28/25 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	89.1			%	1	BIE0753	05/29/25	05/30/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/28/25 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.509	0.0100		mmhos/cm	1	BIE0803	05/30/25	06/02/25	EPA 120.1	

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

Date Sampled: **05/28/25 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.68			pH Units	1	BIE0801	05/30/25	06/02/25	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST06@0-6"
2505131-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/28/25 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIE0773	05/30/25	05/30/25	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: **05/28/25 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0457	114 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0404	101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/28/25 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	280	50		mg/kg	1	BIE0775	05/30/25	05/30/25	EPA 8015M	
C28-C36 (ORO)	200	50		"	"	"	"	"	"	

Date Sampled: **05/28/25 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	6.43	51.4 %		50-140		"	"	"	"	

PAH by EPA Method 8270E 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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST06@0-6"
2505131-06 (Soil)

Summit Scientific

PAH by EPA Method 8270E SIM

Date Sampled: **05/28/25 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIE0759	05/29/25	06/03/25	EPA 8270E 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	0.0566	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: **05/28/25 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0236	70.9 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0190	56.9 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/28/25 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BIE0750	05/28/25	05/30/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/28/25 10:30**

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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

AST06@0-6"
2505131-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.49	0.200	mg/kg dry	1	BIE0749	05/28/25	05/29/25	EPA 6020B	
Barium	66.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.67	0.400	"	"	"	"	"	"	
Lead	4.22	0.200	"	"	"	"	"	"	
Nickel	2.42	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	9.81	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **05/28/25 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIE0754	05/29/25	05/29/25	Hach 8000	

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

Date Sampled: **05/28/25 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	238	0.0500	mg/L dry	1	BIE0798	05/30/25	06/06/25	EPA 6020B	
Magnesium	63.1	0.0500	"	"	"	"	"	"	
Sodium	89.9	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/28/25 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.34	0.00100	units	1	BIF0099	06/06/25	06/06/25	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
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
 Project Manager: Andy Sagen

Reported:
 06/13/25 08:43

AST06@0-6"
2505131-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/28/25 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.3		%	1	BIE0753	05/29/25	05/30/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/28/25 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.32	0.0100	mmhos/cm	1	BIE0803	05/30/25	06/02/25	EPA 120.1	

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

Date Sampled: **05/28/25 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BIE0801	05/30/25	06/02/25	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BIE0773 - EPA 5030 Soil MS

Blank (BIE0773-BLK1)

Prepared & Analyzed: 05/30/25

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
m,p-Xylene	ND	0.010	"							
o-Xylene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0426</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>		<i>50-150</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>97.9</i>		<i>50-150</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>		<i>50-150</i>		

LCS (BIE0773-BS1)

Prepared & Analyzed: 05/30/25

Benzene	0.111	0.0020	mg/kg	0.100		111		70-130		
Toluene	0.106	0.0050	"	0.100		106		70-130		
Ethylbenzene	0.0998	0.0050	"	0.100		99.8		70-130		
m,p-Xylene	0.200	0.010	"	0.200		100		70-130		
o-Xylene	0.104	0.0050	"	0.100		104		70-130		
1,2,4-Trimethylbenzene	0.0993	0.0050	"	0.100		99.3		70-130		
1,3,5-Trimethylbenzene	0.0997	0.0050	"	0.100		99.7		70-130		
Naphthalene	0.0917	0.0038	"	0.100		91.7		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0418</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>		<i>50-150</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.4</i>		<i>50-150</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>		<i>50-150</i>		

Matrix Spike (BIE0773-MS1)

Source: 2505125-01

Prepared & Analyzed: 05/30/25

Benzene	0.118	0.0020	mg/kg	0.100	ND	118		70-130		
Toluene	0.114	0.0050	"	0.100	ND	114		70-130		
Ethylbenzene	0.108	0.0050	"	0.100	ND	108		70-130		
m,p-Xylene	0.214	0.010	"	0.200	ND	107		70-130		
o-Xylene	0.111	0.0050	"	0.100	ND	111		70-130		
1,2,4-Trimethylbenzene	0.106	0.0050	"	0.100	ND	106		70-130		
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107		70-130		
Naphthalene	0.0996	0.0038	"	0.100	ND	99.6		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0441</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>		<i>50-150</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>		<i>50-150</i>		

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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BIE0773 - EPA 5030 Soil MS

Matrix Spike (BIE0773-MS1)

Source: 2505125-01

Prepared & Analyzed: 05/30/25

Surrogate: 4-Bromofluorobenzene 0.0405 mg/kg 0.0400 101 50-150

Matrix Spike Dup (BIE0773-MSD1)

Source: 2505125-01

Prepared & Analyzed: 05/30/25

Benzene	0.108	0.0020	mg/kg	0.100	ND	108	70-130	8.96	30
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	9.54	30
Ethylbenzene	0.0974	0.0050	"	0.100	ND	97.4	70-130	10.5	30
m,p-Xylene	0.194	0.010	"	0.200	ND	96.9	70-130	9.98	30
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	9.51	30
1,2,4-Trimethylbenzene	0.0951	0.0050	"	0.100	ND	95.1	70-130	11.3	30
1,3,5-Trimethylbenzene	0.0952	0.0050	"	0.100	ND	95.2	70-130	11.2	30
Naphthalene	0.0878	0.0038	"	0.100	ND	87.8	70-130	12.6	30
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	50-150		
Surrogate: Toluene-d8	0.0396		"	0.0400		99.1	50-150		
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BIE0775 - EPA 3550A

Blank (BIE0775-BLK1)

Prepared & Analyzed: 05/30/25

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.1		"	12.5		105		50-140			

LCS (BIE0775-BS1)

Prepared & Analyzed: 05/30/25

C10-C28 (DRO)	476	50	mg/kg	500		95.1		50-140			
Surrogate: <i>o</i> -Terphenyl	13.2		"	12.5		106		50-140			

Matrix Spike (BIE0775-MS1)

Source: 2505124-01

Prepared & Analyzed: 05/30/25

C10-C28 (DRO)	540	50	mg/kg	500	54.9	97.0		50-140			
Surrogate: <i>o</i> -Terphenyl	11.3		"	12.5		90.8		50-140			

Matrix Spike Dup (BIE0775-MSD1)

Source: 2505124-01

Prepared & Analyzed: 05/30/25

C10-C28 (DRO)	547	50	mg/kg	500	54.9	98.5		50-140	1.40	20	
Surrogate: <i>o</i> -Terphenyl	11.3		"	12.5		90.7		50-140			

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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

PAH by EPA Method 8270E SIM - Quality Control

Summit Scientific

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

Batch BIE0759 - EPA 5030 Soil MS

Blank (BIE0759-BLK1)

Prepared: 05/29/25 Analyzed: 06/03/25

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	0.0253		"	0.0333		76.0	40-140			
Surrogate: Fluoranthene-d10	0.0263		"	0.0333		78.9	40-140			

LCS (BIE0759-BS1)

Prepared: 05/29/25 Analyzed: 06/03/25

Acenaphthene	0.0273	0.00500	mg/kg	0.0333		82.0	40-140			
Anthracene	0.0209	0.00500	"	0.0333		62.8	40-140			
Benzo (a) anthracene	0.0214	0.00500	"	0.0333		64.2	40-140			
Benzo (a) pyrene	0.0204	0.00500	"	0.0333		61.3	40-140			
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333		63.4	40-140			
Benzo (k) fluoranthene	0.0214	0.00500	"	0.0333		64.1	40-140			
Chrysene	0.0216	0.00500	"	0.0333		64.9	40-140			
Dibenz (a,h) anthracene	0.0166	0.00500	"	0.0333		49.7	40-140			
Fluoranthene	0.0214	0.00500	"	0.0333		64.3	40-140			
Fluorene	0.0226	0.00500	"	0.0333		67.7	40-140			
Indeno (1,2,3-cd) pyrene	0.0167	0.00500	"	0.0333		50.2	40-140			
Pyrene	0.0218	0.00500	"	0.0333		65.3	40-140			
1-Methylnaphthalene	0.0211	0.00500	"	0.0333		63.4	40-140			
2-Methylnaphthalene	0.0197	0.00500	"	0.0333		59.0	40-140			
Surrogate: 2-Methylnaphthalene-d10	0.0205		"	0.0333		61.4	40-140			
Surrogate: Fluoranthene-d10	0.0217		"	0.0333		65.1	40-140			

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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

PAH by EPA Method 8270E SIM - Quality Control

Summit Scientific

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

Batch BIE0759 - EPA 5030 Soil MS

Matrix Spike (BIE0759-MS1)		Source: 2505121-01			Prepared: 05/29/25		Analyzed: 06/03/25	
Acenaphthene	0.0243	0.00500	mg/kg	0.0333	ND	72.8	40-140	
Anthracene	0.0195	0.00500	"	0.0333	ND	58.4	40-140	
Benzo (a) anthracene	0.0192	0.00500	"	0.0333	ND	57.6	40-140	
Benzo (a) pyrene	0.0184	0.00500	"	0.0333	ND	55.2	40-140	
Benzo (b) fluoranthene	0.0192	0.00500	"	0.0333	ND	57.7	40-140	
Benzo (k) fluoranthene	0.0192	0.00500	"	0.0333	ND	57.6	40-140	
Chrysene	0.0192	0.00500	"	0.0333	ND	57.7	40-140	
Dibenz (a,h) anthracene	0.0151	0.00500	"	0.0333	ND	45.4	40-140	
Fluoranthene	0.0199	0.00500	"	0.0333	ND	59.6	40-140	
Fluorene	0.0212	0.00500	"	0.0333	ND	63.6	40-140	
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.2	40-140	
Pyrene	0.0192	0.00500	"	0.0333	ND	57.6	40-140	
1-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.3	40-140	
2-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.5	40-140	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0199</i>		<i>"</i>	<i>0.0333</i>		<i>59.7</i>	<i>40-140</i>	
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0200</i>		<i>"</i>	<i>0.0333</i>		<i>60.1</i>	<i>40-140</i>	

Matrix Spike Dup (BIE0759-MSD1)		Source: 2505121-01			Prepared: 05/29/25		Analyzed: 06/03/25			
Acenaphthene	0.0204	0.00500	mg/kg	0.0333	ND	61.2	40-140	17.3	30	
Anthracene	0.0149	0.00500	"	0.0333	ND	44.8	40-140	26.2	30	
Benzo (a) anthracene	0.0150	0.00500	"	0.0333	ND	45.0	40-140	24.5	30	
Benzo (a) pyrene	0.0144	0.00500	"	0.0333	ND	43.1	40-140	24.8	30	
Benzo (b) fluoranthene	0.0150	0.00500	"	0.0333	ND	45.0	40-140	24.6	30	
Benzo (k) fluoranthene	0.0150	0.00500	"	0.0333	ND	45.1	40-140	24.2	30	
Chrysene	0.0151	0.00500	"	0.0333	ND	45.3	40-140	24.1	30	
Dibenz (a,h) anthracene	0.0117	0.00500	"	0.0333	ND	35.1	40-140	25.6	30	QM-05
Fluoranthene	0.0157	0.00500	"	0.0333	ND	47.0	40-140	23.8	30	
Fluorene	0.0160	0.00500	"	0.0333	ND	47.9	40-140	28.3	30	
Indeno (1,2,3-cd) pyrene	0.0121	0.00500	"	0.0333	ND	36.2	40-140	24.2	30	QM-05
Pyrene	0.0156	0.00500	"	0.0333	ND	46.8	40-140	20.7	30	
1-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	48.0	40-140	22.7	30	
2-Methylnaphthalene	0.0144	0.00500	"	0.0333	ND	43.1	40-140	26.8	30	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0158</i>		<i>"</i>	<i>0.0333</i>		<i>47.5</i>	<i>40-140</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0159</i>		<i>"</i>	<i>0.0333</i>		<i>47.6</i>	<i>40-140</i>			

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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

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

Summit Scientific

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

Batch BIE0750 - EPA 3050B

Blank (BIE0750-BLK1)

Prepared: 05/28/25 Analyzed: 05/30/25

Boron ND 2.00 mg/L wet

LCS (BIE0750-BS1)

Prepared: 05/28/25 Analyzed: 05/30/25

Boron 4.78 2.00 mg/L wet 4.98 96.0 80-120

Duplicate (BIE0750-DUP1)

Source: 2505129-01

Prepared: 05/28/25 Analyzed: 05/30/25

Boron 0.152 2.00 mg/L dry 0.167 9.22 20

Matrix Spike (BIE0750-MS1)

Source: 2505129-01

Prepared: 05/28/25 Analyzed: 05/30/25

Boron 5.73 2.00 mg/L dry 5.35 0.167 104 75-125

Matrix Spike Dup (BIE0750-MSD1)

Source: 2505129-01

Prepared: 05/28/25 Analyzed: 05/30/25

Boron 5.49 2.00 mg/L dry 5.32 0.167 100 75-125 4.36 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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BIE0749 - EPA 3050B

Blank (BIE0749-BLK1)

Prepared: 05/28/25 Analyzed: 05/29/25

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 (BIE0749-BS1)

Prepared: 05/28/25 Analyzed: 05/30/25

Arsenic	39.0	0.200	mg/kg wet	41.3	94.5	80-120
Barium	42.5	0.400	"	41.3	103	80-120
Cadmium	2.00	0.200	"	2.07	96.6	80-120
Copper	40.1	0.400	"	41.3	97.0	80-120
Lead	20.7	0.200	"	20.7	100	80-120
Nickel	39.0	0.400	"	41.3	94.3	80-120
Silver	1.96	0.0200	"	2.07	94.7	80-120
Zinc	38.5	0.400	"	41.3	93.3	80-120
Selenium	4.50	0.260	"	4.13	109	80-120

Duplicate (BIE0749-DUP1)

Source: 2505127-01

Prepared: 05/28/25 Analyzed: 05/29/25

Arsenic	0.820	0.200	mg/kg dry	1.06	25.7	20	QR-04
Barium	40.8	0.400	"	36.3	11.7	20	
Cadmium	0.105	0.200	"	0.0936	11.7	20	
Copper	4.36	0.400	"	3.61	18.7	20	
Lead	6.19	0.200	"	5.15	18.3	20	
Nickel	1.90	0.400	"	2.09	9.59	20	
Silver	0.0259	0.0200	"	0.0238	8.09	20	
Zinc	13.1	0.400	"	12.6	3.37	20	
Selenium	ND	0.260	"	ND		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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BIE0749 - EPA 3050B

Matrix Spike (BIE0749-MS1)	Source: 2505127-01			Prepared: 05/28/25 Analyzed: 05/29/25								
Arsenic	23.3	0.200	mg/kg dry	42.5	1.06	52.3	75-125					QM-05
Barium	69.7	0.400	"	42.5	36.3	78.6	75-125					
Cadmium	2.10	0.200	"	2.13	0.0936	94.4	75-125					
Copper	26.0	0.400	"	42.5	3.61	52.6	75-125					QM-05
Lead	24.7	0.200	"	21.3	5.15	91.8	75-125					
Nickel	24.0	0.400	"	42.5	2.09	51.6	75-125					QM-05
Silver	1.97	0.0200	"	2.13	0.0238	91.6	75-125					
Zinc	31.7	0.400	"	42.5	12.6	44.9	75-125					QM-05
Selenium	4.74	0.260	"	4.25	ND	111	75-125					

Matrix Spike Dup (BIE0749-MSD1)	Source: 2505127-01			Prepared: 05/28/25 Analyzed: 05/29/25								
Arsenic	24.0	0.200	mg/kg dry	45.7	1.06	50.2	75-125	2.93	25			QM-05
Barium	85.3	0.400	"	45.7	36.3	107	75-125	20.1	25			
Cadmium	2.42	0.200	"	2.29	0.0936	102	75-125	14.0	25			
Copper	27.9	0.400	"	45.7	3.61	53.2	75-125	7.19	25			QM-05
Lead	28.7	0.200	"	22.9	5.15	103	75-125	15.1	25			
Nickel	25.2	0.400	"	45.7	2.09	50.5	75-125	4.74	25			QM-05
Silver	2.29	0.0200	"	2.29	0.0238	99.3	75-125	15.1	25			
Zinc	36.3	0.400	"	45.7	12.6	51.8	75-125	13.5	25			QM-05
Selenium	4.92	0.260	"	4.57	ND	108	75-125	3.86	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

Hexavalent Chromium by HACH M8023 - Quality Control
Summit Scientific

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

Batch BIE0754 - 3060A Mod

Blank (BIE0754-BLK1)

Prepared & Analyzed: 05/29/25

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BIE0754-BS1)

Prepared & Analyzed: 05/29/25

Chromium, Hexavalent 23.0 0.30 mg/kg wet 24.3 94.8 80-120

Duplicate (BIE0754-DUP1)

Source: 2505123-01

Prepared & Analyzed: 05/29/25

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BIE0754-MS1)

Source: 2505123-01

Prepared & Analyzed: 05/29/25

Chromium, Hexavalent 26.5 0.30 mg/kg dry 27.6 ND 96.2 75-125

Matrix Spike Dup (BIE0754-MSD1)

Source: 2505123-01

Prepared & Analyzed: 05/29/25

Chromium, Hexavalent 27.5 0.30 mg/kg dry 27.6 ND 99.8 75-125 3.67 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
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
 Project Manager: Andy Sagen

Reported:
 06/13/25 08:43

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

Summit Scientific

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

Batch BIE0798 - General Preparation

Blank (BIE0798-BLK1)

Prepared: 05/30/25 Analyzed: 06/06/25

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

LCS (BIE0798-BS1)

Prepared: 05/30/25 Analyzed: 06/06/25

Calcium	5.46	0.0500	mg/L wet	5.00		109	70-130			
Magnesium	5.01	0.0500	"	5.00		100	70-130			
Sodium	4.99	0.0500	"	5.00		99.7	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
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
 Project Manager: Andy Sagen

Reported:
 06/13/25 08:43

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

Summit Scientific

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

Batch BIE0753 - General Preparation

Duplicate (BIE0753-DUP1)

Source: 2505124-01

Prepared: 05/29/25 Analyzed: 05/30/25

% Solids	92.4		%		86.6			6.43		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
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
 Project Manager: Andy Sagen

Reported:
 06/13/25 08:43

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

Summit Scientific

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

Batch BIE0803 - General Preparation

Blank (BIE0803-BLK1)

Prepared: 05/30/25 Analyzed: 06/02/25

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BIE0803-BS1)

Prepared: 05/30/25 Analyzed: 06/02/25

Specific Conductance (EC) 0.147 0.0100 mmhos/cm 0.150 97.8 95-105

Duplicate (BIE0803-DUP1)

Source: 2505131-01

Prepared: 05/30/25 Analyzed: 06/02/25

Specific Conductance (EC) 0.872 0.0100 mmhos/cm 0.893 2.37 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
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
 Project Manager: Andy Sagen

Reported:
 06/13/25 08:43

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

Summit Scientific

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

Batch BIE0801 - General Preparation

LCS (BIE0801-BS1)

Prepared: 05/30/25 Analyzed: 06/02/25

pH	9.10	pH Units	9.18	99.1	95-105
----	------	----------	------	------	--------

Duplicate (BIE0801-DUP1)

Source: 2505131-01

Prepared: 05/30/25 Analyzed: 06/02/25

pH	8.37	pH Units	8.38	0.0956	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
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Hullaballoo State Y 21 Econode

Project Number: [none]
Project Manager: Andy Sagen

Reported:
06/13/25 08:43

Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values. Only applies to source/DUP and MS/MSD pairs.
- 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