

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 29, 2025

Andy Sagen

Tasman Geosciences

4725 Independence St.

Wheat Ridge, CO 80033

RE: Noble - Thistle Down B31-20D

Work Order #2504189

Enclosed are the results of analyses for samples received by Summit Scientific on 04/09/25 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Natalie Tessier For Paul Shrewsbury

President



Tasman Geosciences
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D

Project Number: UWRWE-A4371-AES
 Project Manager: Andy Sagen

Reported:
 05/29/25 09:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-DL@4'	2504189-01	Soil	04/09/25 11:21	04/09/25 18:00
SEP01-FL@4'	2504189-02	Soil	04/09/25 11:54	04/09/25 18:00
SEP02-DL@4'	2504189-03	Soil	04/09/25 11:27	04/09/25 18:00
SEP03-DL@4'	2504189-04	Soil	04/09/25 11:28	04/09/25 18:00
SEP04-DL@4'	2504189-05	Soil	04/09/25 11:32	04/09/25 18:00
SEP05-DL@4'	2504189-06	Soil	04/09/25 11:33	04/09/25 18:00
SEP06-DL@4'	2504189-07	Soil	04/09/25 11:36	04/09/25 18:00
SEP07-DL@4'	2504189-08	Soil	04/09/25 11:40	04/09/25 18:00
BKG01@0-6"	2504189-09	Soil	04/09/25 13:20	04/09/25 18:00
BKG01@2.5'	2504189-10	Soil	04/09/25 13:21	04/09/25 18:00
BKG01@4'	2504189-11	Soil	04/09/25 13:22	04/09/25 18:00



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

Lab ID	Page 1 of 1
2504189	

Client: <u>Chevron Noble</u>	Send Data To: Project Manager: Andy Sagen	Send Invoice To: Company: <u>Chevron Noble</u>
Address: <u>6855 W. 119th Ave 4765 Interstate St.</u>	E-Mail: <u>tas-chevron-1@tasman-geo.com</u>	Project Name/Location: <u>Thistle Down B31-20D</u>
City/State/Zip: <u>Broomfield/CO-80020 West Edge 40, 8033</u>	<u>rbueuf27@chevron.com</u>	AFE#: <u>UWRWE-49371-AES</u>
Phone: 7199371898	Project Name: <u>Thistle Down B31-20D</u>	PO/Billing Codes:
Sampler Name: Josh Adams	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	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	
1	SEP01-DL@4'	4/9/25	1121	2			X			X		X	X	X	X	X	X		SAR, EC, pH by saturated paste
2	SEP01-FL@4'		1154									X	X	X	X	X	X		
3	SEP02-DL@4'		1127									X	X	X	X	X	X		
4	SEP03-DL@4'		1128									X	X	X	X	X	X		
5	SEP04-DL@4'		1132									X	X	X	X	X	X		
6	SEP05-DL@4'		1133									X	X	X	X	X	X		
7	SEP06-DL@4'		1136									X	X	X	X	X	X		
8	SEP07-DL@4'		1140									X	X	X	X	X	X		
9	BK601@0-6"		1320									X			X	X			
10	BK601@7.5'		1321									X			X	X			
11	BK601@4'		1322									X			X	X			
12																			
13																			
14																			
15																			

Relinquished by: Josh Adams	Date/Time: 4/9/25 1626	Received by: Tasman Lock Box	Date/Time: 4/9/25 1626	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 4/9/25 1800	Received by: [Signature]	Date/Time: 4/9/25 1800	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 2.2	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:	Standard	X Field Turb.	

S₂

S2 Work Order# 2504189

Sample Receipt Checklist

Client: Noble Casman Client Project ID: Trickle down B31-20DReceived Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____Matrix (Circle all that apply) Air/Soil/Water/Other Temp (°C) 2.2 Thermometer # 1Bottle 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.	-			<u>on ice</u>
If custody seals are present, are they intact? ⁽¹⁾	-			
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		-		
<u>Additional Comments (if any):</u>				

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

Control Form #: SRC-001

SN
Custodian Printed Name

4/9/25
Date/Time



Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D

Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP01-DL@4'
2504189-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BID0893	04/15/25	04/17/25	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: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0420	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0387	96.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0397	99.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BID0896	04/15/25	05/17/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.82	62.6 %	50-140		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PAH by EPA Method 8270D SIM

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BID0935	04/16/25	05/18/25	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: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0241	72.4 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0223	67.0 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BID0722	04/14/25	04/16/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
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SEP01-DL@4'
2504189-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.81	0.200	mg/kg dry	1	BID0666	04/11/25	05/24/25	EPA 6020B	
Barium	53.0	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	7.79	0.400	"	"	"	"	"	"	
Lead	5.03	0.200	"	"	"	"	"	"	
Nickel	4.86	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	19.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0841	04/15/25	04/16/25	Hach 8000	

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

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1960	0.0500	mg/L dry	1	BID0625	04/10/25	04/11/25	EPA 6020B	
Magnesium	101	0.0500	"	"	"	"	"	"	
Sodium	2.12	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0127	0.00100	units	1	BID0835	04/15/25	04/15/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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SEP01-DL@4'
2504189-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.8		%	1	BID0754	04/14/25	04/14/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.198	0.0100	mmhos/cm	1	BID0627	04/10/25	04/11/25	EPA 120.1	

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

Date Sampled: **04/09/25 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.29		pH Units	1	BID0626	04/10/25	04/11/25	EPA 9045D	

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05/29/25 09:24

SEP01-FL@4'
2504189-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BID0893	04/15/25	04/17/25	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: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0406	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0384	96.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0399	99.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BID0896	04/15/25	05/17/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.72	61.8 %	50-140		"	"	"	"	

PAH by EPA Method 8270D SIM

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SEP01-FL@4'
2504189-02 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BID0935	04/16/25	05/16/25	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: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0241	72.2 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0241	72.4 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BID0722	04/14/25	04/16/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
05/29/25 09:24

SEP01-FL@4'
2504189-02 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.82	0.200	mg/kg dry	1	BID0666	04/11/25	05/24/25	EPA 6020B
Barium	56.9	0.400	"	"	"	"	"	"
Cadmium	0.262	0.200	"	"	"	"	"	"
Copper	8.21	0.400	"	"	"	"	"	"
Lead	6.01	0.200	"	"	"	"	"	"
Nickel	5.70	0.400	"	"	"	"	"	"
Silver	0.0247	0.0200	"	"	"	"	"	"
Zinc	20.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by HACH M8023

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0841	04/15/25	04/16/25	Hach 8000	

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

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1010	0.0500	mg/L dry	1	BID0625	04/10/25	04/11/25	EPA 6020B	
Magnesium	45.6	0.0500	"	"	"	"	"	"	
Sodium	1.99	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0166	0.00100	units	1	BID0835	04/15/25	04/15/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SEP01-FL@4'
2504189-02 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.0	%	1	BID0754	04/14/25	04/14/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.191	0.0100	mmhos/cm	1	BID0627	04/10/25	04/11/25	EPA 120.1	

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

Date Sampled: **04/09/25 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.25		pH Units	1	BID0626	04/10/25	04/11/25	EPA 9045D	

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Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP02-DL@4'
2504189-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BID0893	04/15/25	04/17/25	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: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0410	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0389	97.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	100 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BID0896	04/15/25	05/17/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.25	50.0 %	50-140		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP02-DL@4'
2504189-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BID0935	04/16/25	05/16/25	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: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0252	75.7 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0257	77.2 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BID0722	04/14/25	04/16/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP02-DL@4'
2504189-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.76	0.200	mg/kg dry	1	BID0666	04/11/25	05/24/25	EPA 6020B	
Barium	58.5	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	7.01	0.400	"	"	"	"	"	"	
Lead	5.24	0.200	"	"	"	"	"	"	
Nickel	5.57	0.400	"	"	"	"	"	"	
Silver	0.0227	0.0200	"	"	"	"	"	"	
Zinc	21.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0841	04/15/25	04/16/25	Hach 8000	

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

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	241	0.0500	mg/L dry	1	BID0625	04/10/25	04/11/25	EPA 6020B	
Magnesium	29.9	0.0500	"	"	"	"	"	"	
Sodium	1.37	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0221	0.00100	units	1	BID0835	04/15/25	04/15/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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 Project Number: UWRWE-A4371-AES
 Project Manager: Andy Sagen

Reported:
 05/29/25 09:24

SEP02-DL@4'
2504189-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.8		%	1	BID0754	04/14/25	04/14/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.159	0.0100	mmhos/cm	1	BID0627	04/10/25	04/11/25	EPA 120.1	

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

Date Sampled: **04/09/25 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.39		pH Units	1	BID0626	04/10/25	04/11/25	EPA 9045D	

Summit Scientific

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4725 Independence St.
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Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP03-DL@4'
2504189-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BID0893	04/15/25	04/17/25	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: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0411	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0399	99.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BID0896	04/15/25	05/17/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.14	57.1 %	50-140		"	"	"	"	

PAH by EPA Method 8270D SIM

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05/29/25 09:24

SEP03-DL@4'
2504189-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BID0935	04/16/25	05/16/25	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: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0272	81.6 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0262	78.6 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BID0722	04/14/25	04/16/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
05/29/25 09:24

SEP03-DL@4'
2504189-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.85	0.200	mg/kg dry	1	BID0666	04/11/25	05/24/25	EPA 6020B
Barium	62.6	0.400	"	"	"	"	"	"
Cadmium	0.265	0.200	"	"	"	"	"	"
Copper	6.15	0.400	"	"	"	"	"	"
Lead	5.28	0.200	"	"	"	"	"	"
Nickel	5.85	0.400	"	"	"	"	"	"
Silver	0.0238	0.0200	"	"	"	"	"	"
Zinc	20.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by HACH M8023

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0841	04/15/25	04/16/25	Hach 8000	

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

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	889	0.0500	mg/L dry	1	BID0625	04/10/25	04/11/25	EPA 6020B	
Magnesium	58.6	0.0500	"	"	"	"	"	"	
Sodium	14.5	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.127	0.00100	units	1	BID0835	04/15/25	04/15/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Thistle Down B31-20D

Project Number: UWRWE-A4371-AES
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Reported:
 05/29/25 09:24

SEP03-DL@4'
2504189-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	90.1	%	1	BID0754	04/14/25	04/14/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.263	0.0100	mmhos/cm	1	BID0627	04/10/25	04/11/25	EPA 120.1	

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

Date Sampled: **04/09/25 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.24		pH Units	1	BID0626	04/10/25	04/11/25	EPA 9045D	

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Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP04-DL@4'
2504189-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BID0893	04/15/25	04/17/25	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: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0418	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0404	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BID0896	04/15/25	05/17/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.7	85.8 %	50-140		"	"	"	"	

PAH by EPA Method 8270D SIM

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SEP04-DL@4'
2504189-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BID0935	04/16/25	05/16/25	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: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0248	74.5 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0244	73.3 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BID0722	04/14/25	04/16/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP04-DL@4'
2504189-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.63	0.200	mg/kg dry	1	BID0666	04/11/25	05/24/25	EPA 6020B	
Barium	49.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	8.00	0.400	"	"	"	"	"	"	
Lead	5.55	0.200	"	"	"	"	"	"	
Nickel	5.10	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	20.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0841	04/15/25	04/16/25	Hach 8000	

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

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	575	0.0500	mg/L dry	1	BID0625	04/10/25	04/11/25	EPA 6020B	
Magnesium	48.2	0.0500	"	"	"	"	"	"	
Sodium	2.44	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0263	0.00100	units	1	BID0835	04/15/25	04/15/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP04-DL@4'
2504189-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.7		%	1	BID0754	04/14/25	04/14/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.176	0.0100	mmhos/cm	1	BID0627	04/10/25	04/11/25	EPA 120.1	

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

Date Sampled: **04/09/25 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.32		pH Units	1	BID0626	04/10/25	04/11/25	EPA 9045D	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP05-DL@4'
2504189-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BID0893	04/15/25	04/17/25	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: **04/09/25 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0419	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0403	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BID0896	04/15/25	05/18/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.55	60.4 %	50-140		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP05-DL@4'
2504189-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BID0935	04/16/25	05/16/25	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: **04/09/25 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0256	76.7 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0244	73.3 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BID0722	04/14/25	04/16/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP05-DL@4'
2504189-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.85	0.200	mg/kg dry	1	BID0666	04/11/25	05/24/25	EPA 6020B	
Barium	53.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	6.96	0.400	"	"	"	"	"	"	
Lead	5.54	0.200	"	"	"	"	"	"	
Nickel	5.66	0.400	"	"	"	"	"	"	
Silver	0.0236	0.0200	"	"	"	"	"	"	
Zinc	19.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0841	04/15/25	04/16/25	Hach 8000	

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

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1320	0.0500	mg/L dry	1	BID0625	04/10/25	04/11/25	EPA 6020B	
Magnesium	98.3	0.0500	"	"	"	"	"	"	
Sodium	2.02	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0144	0.00100	units	1	BID0835	04/15/25	04/15/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
 Project Number: UWRWE-A4371-AES
 Project Manager: Andy Sagen

Reported:
 05/29/25 09:24

SEP05-DL@4'
2504189-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	82.9			%	1	BID0754	04/14/25	04/14/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.202	0.0100		mmhos/cm	1	BID0627	04/10/25	04/11/25	EPA 120.1	

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

Date Sampled: **04/09/25 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.25			pH Units	1	BID0626	04/10/25	04/11/25	EPA 9045D	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP06-DL@4'
2504189-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BID0893	04/15/25	04/17/25	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: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0417	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BID0896	04/15/25	05/18/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.46	59.7 %	50-140		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP06-DL@4'
2504189-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BID0935	04/16/25	05/16/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.00730	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.00634	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0431	129 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0421	126 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BID0722	04/14/25	04/16/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP06-DL@4'
2504189-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.83	0.200	mg/kg dry	1	BID0666	04/11/25	05/24/25	EPA 6020B
Barium	47.9	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	7.10	0.400	"	"	"	"	"	"
Lead	5.24	0.200	"	"	"	"	"	"
Nickel	5.73	0.400	"	"	"	"	"	"
Silver	0.0243	0.0200	"	"	"	"	"	"
Zinc	19.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by HACH M8023

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0841	04/15/25	04/16/25	Hach 8000	

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

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1520	0.0500	mg/L dry	1	BID0625	04/10/25	04/11/25	EPA 6020B	
Magnesium	81.6	0.0500	"	"	"	"	"	"	
Sodium	6.12	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0414	0.00100	units	1	BID0835	04/15/25	04/15/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
 Project Number: UWRWE-A4371-AES
 Project Manager: Andy Sagen

Reported:
 05/29/25 09:24

SEP06-DL@4'
2504189-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	BID0754	04/14/25	04/14/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.248	0.0100	mmhos/cm	1	BID0627	04/10/25	04/11/25	EPA 120.1	

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

Date Sampled: **04/09/25 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.22		pH Units	1	BID0626	04/10/25	04/11/25	EPA 9045D	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP07-DL@4'
2504189-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BID0893	04/15/25	04/17/25	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: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0424	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	100 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BID0896	04/15/25	05/18/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.86	62.8 %	50-140		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP07-DL@4'
2504189-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BID0935	04/16/25	05/17/25	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: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0217	65.1 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0239	71.8 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BID0722	04/14/25	04/16/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP07-DL@4'
2504189-08 (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	BID0666	04/11/25	05/24/25	EPA 6020B	
Barium	46.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	6.36	0.400	"	"	"	"	"	"	
Lead	13.5	0.200	"	"	"	"	"	"	
Nickel	5.09	0.400	"	"	"	"	"	"	
Silver	0.0265	0.0200	"	"	"	"	"	"	
Zinc	21.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0841	04/15/25	04/16/25	Hach 8000	

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

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	555	0.0500	mg/L dry	1	BID0625	04/10/25	04/11/25	EPA 6020B	
Magnesium	49.6	0.0500	"	"	"	"	"	"	
Sodium	6.39	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0697	0.00100	units	1	BID0835	04/15/25	04/15/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

SEP07-DL@4'
2504189-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.0		%	1	BID0754	04/14/25	04/14/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.134	0.0100	mmhos/cm	1	BID0627	04/10/25	04/11/25	EPA 120.1	

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

Date Sampled: **04/09/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.69		pH Units	1	BID0626	04/10/25	04/11/25	EPA 9045D	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

**BKG01@0-6''
2504189-09 (Soil)**

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/09/25 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L dry	1	BID0722	04/14/25	04/16/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/09/25 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.40	0.200	mg/kg dry	1	BID0666	04/11/25	05/24/25	EPA 6020B	
Barium	46.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	6.26	0.400	"	"	"	"	"	"	
Lead	5.94	0.200	"	"	"	"	"	"	
Nickel	4.05	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	18.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **04/09/25 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0841	04/15/25	04/16/25	Hach 8000	

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

Date Sampled: **04/09/25 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	84.0	0.0500	mg/L dry	1	BID0625	04/10/25	04/11/25	EPA 6020B	
Magnesium	23.0	0.0500	"	"	"	"	"	"	
Sodium	1.88	0.0500	"	"	"	"	"	"	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

BKG01@0-6''
2504189-09 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **04/09/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0469	0.00100	units	1	BID0835	04/15/25	04/15/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.5		%	1	BID0754	04/14/25	04/14/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/09/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.215	0.0100	mmhos/cm	1	BID0627	04/10/25	04/11/25	EPA 120.1	

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

Date Sampled: **04/09/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.68		pH Units	1	BID0626	04/10/25	04/11/25	EPA 9045D	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

BKG01@2.5'
2504189-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/09/25 13:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L dry	1	BID0722	04/14/25	04/16/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/09/25 13:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.66	0.200	mg/kg dry	1	BID0666	04/11/25	05/24/25	EPA 6020B	
Barium	52.0	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	6.11	0.400	"	"	"	"	"	"	
Lead	4.90	0.200	"	"	"	"	"	"	
Nickel	5.90	0.400	"	"	"	"	"	"	
Silver	0.0534	0.0200	"	"	"	"	"	"	
Zinc	20.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **04/09/25 13:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0841	04/15/25	04/16/25	Hach 8000	

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

Date Sampled: **04/09/25 13:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	227	0.0500	mg/L dry	1	BID0625	04/10/25	04/11/25	EPA 6020B	
Magnesium	44.1	0.0500	"	"	"	"	"	"	
Sodium	7.80	0.0500	"	"	"	"	"	"	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

BKG01@2.5'
2504189-10 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **04/09/25 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.124	0.00100	units	1	BID0835	04/15/25	04/15/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/25 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.3		%	1	BID0754	04/14/25	04/14/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/09/25 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.153	0.0100	mmhos/cm	1	BID0627	04/10/25	04/11/25	EPA 120.1	

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

Date Sampled: **04/09/25 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.61		pH Units	1	BID0626	04/10/25	04/11/25	EPA 9045D	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

BKG01@4'
2504189-11 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/09/25 13:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L dry	1	BID0722	04/14/25	04/16/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/09/25 13:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.50	0.200	mg/kg dry	1	BID0666	04/11/25	05/24/25	EPA 6020B	
Barium	57.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	7.20	0.400	"	"	"	"	"	"	
Lead	5.38	0.200	"	"	"	"	"	"	
Nickel	4.98	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	19.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by HACH M8023

Date Sampled: **04/09/25 13:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0841	04/15/25	04/16/25	Hach 8000	

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

Date Sampled: **04/09/25 13:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	213	0.0500	mg/L dry	1	BID0625	04/10/25	04/11/25	EPA 6020B	
Magnesium	42.9	0.0500	"	"	"	"	"	"	
Sodium	2.54	0.0500	"	"	"	"	"	"	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

BKG01@4'
2504189-11 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **04/09/25 13:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0415	0.00100	units	1	BID0835	04/15/25	04/15/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/25 13:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.9		%	1	BID0754	04/14/25	04/14/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/09/25 13:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.346	0.0100	mmhos/cm	1	BID0627	04/10/25	04/11/25	EPA 120.1	

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

Date Sampled: **04/09/25 13:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.32		pH Units	1	BID0626	04/10/25	04/11/25	EPA 9045D	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D

Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

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 BID0893 - EPA 5030 Soil MS

Blank (BID0893-BLK1)

Prepared: 04/15/25 Analyzed: 04/16/25

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.5</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.7</i>	<i>50-150</i>			

LCS (BID0893-BS1)

Prepared: 04/15/25 Analyzed: 04/16/25

Benzene	0.0993	0.0020	mg/kg	0.100		99.3	70-130			
Toluene	0.103	0.0050	"	0.100		103	70-130			
Ethylbenzene	0.101	0.0050	"	0.100		101	70-130			
m,p-Xylene	0.206	0.010	"	0.200		103	70-130			
o-Xylene	0.104	0.0050	"	0.100		104	70-130			
1,2,4-Trimethylbenzene	0.104	0.0050	"	0.100		104	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.103	0.0038	"	0.100		103	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.1</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.8</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>97.0</i>	<i>50-150</i>			

Matrix Spike (BID0893-MS1)

Source: 2504189-01

Prepared: 04/15/25 Analyzed: 04/16/25

Benzene	0.0998	0.0020	mg/kg	0.100	ND	99.8	70-130			
Toluene	0.104	0.0050	"	0.100	ND	104	70-130			
Ethylbenzene	0.0963	0.0050	"	0.100	ND	96.3	70-130			
m,p-Xylene	0.197	0.010	"	0.200	ND	98.4	70-130			
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130			
1,2,4-Trimethylbenzene	0.0964	0.0050	"	0.100	ND	96.4	70-130			
1,3,5-Trimethylbenzene	0.0952	0.0050	"	0.100	ND	95.2	70-130			
Naphthalene	0.0879	0.0038	"	0.100	ND	87.9	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0413</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.2</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.4</i>	<i>50-150</i>			

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

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 BID0893 - EPA 5030 Soil MS

Matrix Spike Dup (BID0893-MSD1)	Source: 2504189-01			Prepared: 04/15/25 Analyzed: 04/16/25						
Benzene	0.0984	0.0020	mg/kg	0.100	ND	98.4	70-130	1.39	30	
Toluene	0.102	0.0050	"	0.100	ND	102	70-130	1.31	30	
Ethylbenzene	0.0957	0.0050	"	0.100	ND	95.7	70-130	0.563	30	
m,p-Xylene	0.196	0.010	"	0.200	ND	98.2	70-130	0.183	30	
o-Xylene	0.0999	0.0050	"	0.100	ND	99.9	70-130	0.0900	30	
1,2,4-Trimethylbenzene	0.0968	0.0050	"	0.100	ND	96.8	70-130	0.435	30	
1,3,5-Trimethylbenzene	0.0953	0.0050	"	0.100	ND	95.3	70-130	0.126	30	
Naphthalene	0.0873	0.0038	"	0.100	ND	87.3	70-130	0.616	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.6</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.8</i>	<i>50-150</i>			

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

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 BID0896 - EPA 3550A

Blank (BID0896-BLK1)

Prepared: 04/15/25 Analyzed: 05/17/25

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.8		"	12.5		94.1	50-140				

LCS (BID0896-BS1)

Prepared: 04/15/25 Analyzed: 05/17/25

C10-C28 (DRO)	506	50	mg/kg	500		101	50-140				
Surrogate: <i>o</i> -Terphenyl	14.7		"	12.5		118	50-140				

Matrix Spike (BID0896-MS1)

Source: 2504189-01

Prepared: 04/15/25 Analyzed: 05/17/25

C10-C28 (DRO)	496	50	mg/kg	500	ND	99.2	50-140				
Surrogate: <i>o</i> -Terphenyl	9.83		"	12.5		78.7	50-140				

Matrix Spike Dup (BID0896-MSD1)

Source: 2504189-01

Prepared: 04/15/25 Analyzed: 05/17/25

C10-C28 (DRO)	462	50	mg/kg	500	ND	92.5	50-140	7.05	20		
Surrogate: <i>o</i> -Terphenyl	8.09		"	12.5		64.7	50-140				

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BID0935 - EPA 5030 Soil MS

Blank (BID0935-BLK1)

Prepared: 04/16/25 Analyzed: 05/16/25

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	0.0314		"	0.0333		94.1	40-140			
Surrogate: Fluoranthene-d10	0.0292		"	0.0333		87.5	40-140			

LCS (BID0935-BS1)

Prepared: 04/16/25 Analyzed: 05/16/25

Acenaphthene	0.0247	0.00500	mg/kg	0.0333		74.0	40-140			
Anthracene	0.0232	0.00500	"	0.0333		69.5	40-140			
Benzo (a) anthracene	0.0239	0.00500	"	0.0333		71.8	40-140			
Benzo (a) pyrene	0.0232	0.00500	"	0.0333		69.6	40-140			
Benzo (b) fluoranthene	0.0250	0.00500	"	0.0333		75.0	40-140			
Benzo (k) fluoranthene	0.0230	0.00500	"	0.0333		68.9	40-140			
Chrysene	0.0225	0.00500	"	0.0333		67.6	40-140			
Dibenz (a,h) anthracene	0.0217	0.00500	"	0.0333		65.2	40-140			
Fluoranthene	0.0219	0.00500	"	0.0333		65.7	40-140			
Fluorene	0.0255	0.00500	"	0.0333		76.4	40-140			
Indeno (1,2,3-cd) pyrene	0.0219	0.00500	"	0.0333		65.8	40-140			
Pyrene	0.0216	0.00500	"	0.0333		64.8	40-140			
1-Methylnaphthalene	0.0228	0.00500	"	0.0333		68.4	40-140			
2-Methylnaphthalene	0.0251	0.00500	"	0.0333		75.4	40-140			
Surrogate: 2-Methylnaphthalene-d10	0.0234		"	0.0333		70.1	40-140			
Surrogate: Fluoranthene-d10	0.0238		"	0.0333		71.4	40-140			

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D

Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BID0935 - EPA 5030 Soil MS

Matrix Spike (BID0935-MS1)	Source: 2504182-01			Prepared: 04/16/25 Analyzed: 05/16/25						
Acenaphthene	0.0289	0.00500	mg/kg	0.0333	ND	86.7	40-140			
Anthracene	0.0286	0.00500	"	0.0333	ND	85.9	40-140			
Benzo (a) anthracene	0.0293	0.00500	"	0.0333	ND	87.8	40-140			
Benzo (a) pyrene	0.0284	0.00500	"	0.0333	ND	85.1	40-140			
Benzo (b) fluoranthene	0.0302	0.00500	"	0.0333	ND	90.7	40-140			
Benzo (k) fluoranthene	0.0281	0.00500	"	0.0333	ND	84.3	40-140			
Chrysene	0.0274	0.00500	"	0.0333	ND	82.3	40-140			
Dibenz (a,h) anthracene	0.0269	0.00500	"	0.0333	ND	80.7	40-140			
Fluoranthene	0.0270	0.00500	"	0.0333	ND	81.1	40-140			
Fluorene	0.0307	0.00500	"	0.0333	ND	92.0	40-140			
Indeno (1,2,3-cd) pyrene	0.0282	0.00500	"	0.0333	ND	84.5	40-140			
Pyrene	0.0272	0.00500	"	0.0333	ND	81.5	40-140			
1-Methylnaphthalene	0.0279	0.00500	"	0.0333	ND	83.7	40-140			
2-Methylnaphthalene	0.0328	0.00500	"	0.0333	ND	98.5	40-140			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0301</i>		<i>"</i>	<i>0.0333</i>		<i>90.2</i>	<i>40-140</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0291</i>		<i>"</i>	<i>0.0333</i>		<i>87.2</i>	<i>40-140</i>			

Matrix Spike Dup (BID0935-MSD1)	Source: 2504182-01			Prepared: 04/16/25 Analyzed: 05/16/25						
Acenaphthene	0.0282	0.00500	mg/kg	0.0333	ND	84.6	40-140	2.46	30	
Anthracene	0.0285	0.00500	"	0.0333	ND	85.5	40-140	0.500	30	
Benzo (a) anthracene	0.0286	0.00500	"	0.0333	ND	85.7	40-140	2.52	30	
Benzo (a) pyrene	0.0291	0.00500	"	0.0333	ND	87.3	40-140	2.61	30	
Benzo (b) fluoranthene	0.0291	0.00500	"	0.0333	ND	87.2	40-140	3.87	30	
Benzo (k) fluoranthene	0.0267	0.00500	"	0.0333	ND	80.2	40-140	4.99	30	
Chrysene	0.0275	0.00500	"	0.0333	ND	82.5	40-140	0.134	30	
Dibenz (a,h) anthracene	0.0361	0.00500	"	0.0333	ND	108	40-140	29.2	30	
Fluoranthene	0.0282	0.00500	"	0.0333	ND	84.6	40-140	4.24	30	
Fluorene	0.0324	0.00500	"	0.0333	ND	97.2	40-140	5.49	30	
Indeno (1,2,3-cd) pyrene	0.0346	0.00500	"	0.0333	ND	104	40-140	20.6	30	
Pyrene	0.0283	0.00500	"	0.0333	ND	84.9	40-140	4.09	30	
1-Methylnaphthalene	0.0286	0.00500	"	0.0333	ND	85.8	40-140	2.45	30	
2-Methylnaphthalene	0.0313	0.00500	"	0.0333	ND	93.8	40-140	4.85	30	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0291</i>		<i>"</i>	<i>0.0333</i>		<i>87.4</i>	<i>40-140</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0321</i>		<i>"</i>	<i>0.0333</i>		<i>96.2</i>	<i>40-140</i>			

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

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

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

Batch BID0722 - EPA 3050B

Blank (BID0722-BLK1)

Prepared: 04/14/25 Analyzed: 04/16/25

Boron ND 2.00 mg/L wet

LCS (BID0722-BS1)

Prepared: 04/14/25 Analyzed: 04/16/25

Boron 5.07 2.00 mg/L wet 5.00 101 80-120

Duplicate (BID0722-DUP1)

Source: 2504189-01

Prepared: 04/14/25 Analyzed: 04/16/25

Boron 0.124 2.00 mg/L dry 0.159 25.0 20 QR-04

Matrix Spike (BID0722-MS1)

Source: 2504189-01

Prepared: 04/14/25 Analyzed: 04/16/25

Boron 5.74 2.00 mg/L dry 5.52 0.159 101 75-125

Matrix Spike Dup (BID0722-MSD1)

Source: 2504189-01

Prepared: 04/14/25 Analyzed: 04/16/25

Boron 5.81 2.00 mg/L dry 5.52 0.159 102 75-125 1.16 25

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D

Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

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 BID0666 - EPA 3050B

Blank (BID0666-BLK1)

Prepared: 04/11/25 Analyzed: 05/24/25

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 (BID0666-BS1)

Prepared: 04/11/25 Analyzed: 05/24/25

Arsenic	39.2	0.200	mg/kg wet	40.3	97.2	80-120
Barium	40.9	0.400	"	40.3	102	80-120
Cadmium	1.95	0.200	"	2.02	96.6	80-120
Copper	41.8	0.400	"	40.3	104	80-120
Lead	20.2	0.200	"	20.2	100	80-120
Nickel	39.9	0.400	"	40.3	99.0	80-120
Silver	1.98	0.0200	"	2.02	98.1	80-120
Zinc	41.8	0.400	"	40.3	104	80-120
Selenium	4.02	0.260	"	4.03	99.7	80-120

Duplicate (BID0666-DUP1)

Source: 2504188-01

Prepared: 04/11/25 Analyzed: 05/24/25

Arsenic	1.70	0.200	mg/kg dry	2.08	20.3	20	QR-01
Barium	52.3	0.400	"	62.1	17.1	20	
Cadmium	0.140	0.200	"	0.146	4.67	20	
Copper	7.04	0.400	"	7.97	12.5	20	
Lead	11.5	0.200	"	15.1	26.6	20	QR-01
Nickel	5.62	0.400	"	5.67	0.862	20	
Silver	0.0278	0.0200	"	0.0346	21.6	20	QR-01
Zinc	20.1	0.400	"	20.4	1.42	20	
Selenium	ND	0.260	"	ND		20	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

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 BID0666 - EPA 3050B

Matrix Spike (BID0666-MS1)

Source: 2504188-01

Prepared: 04/11/25 Analyzed: 05/24/25

Arsenic	45.8	0.200	mg/kg dry	44.9	2.08	97.4	75-125			
Barium	117	0.400	"	44.9	62.1	124	75-125			
Cadmium	2.31	0.200	"	2.24	0.146	96.4	75-125			
Copper	51.7	0.400	"	44.9	7.97	97.5	75-125			
Lead	34.5	0.200	"	22.4	15.1	86.4	75-125			
Nickel	50.8	0.400	"	44.9	5.67	101	75-125			
Silver	2.17	0.0200	"	2.24	0.0346	95.0	75-125			
Zinc	57.8	0.400	"	44.9	20.4	83.4	75-125			
Selenium	3.97	0.260	"	4.49	ND	88.5	75-125			

Matrix Spike Dup (BID0666-MSD1)

Source: 2504188-01

Prepared: 04/11/25 Analyzed: 05/24/25

Arsenic	44.5	0.200	mg/kg dry	43.8	2.08	96.7	75-125	2.85	25	
Barium	138	0.400	"	43.8	62.1	172	75-125	15.7	25	QM-05
Cadmium	2.26	0.200	"	2.19	0.146	96.4	75-125	2.28	25	
Copper	53.4	0.400	"	43.8	7.97	104	75-125	3.16	25	
Lead	33.5	0.200	"	21.9	15.1	84.0	75-125	2.88	25	
Nickel	50.9	0.400	"	43.8	5.67	103	75-125	0.274	25	
Silver	2.09	0.0200	"	2.19	0.0346	93.8	75-125	3.56	25	
Zinc	57.3	0.400	"	43.8	20.4	84.1	75-125	1.02	25	
Selenium	3.70	0.260	"	4.38	ND	84.5	75-125	6.96	25	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

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 BID0841 - 3060A Mod

Blank (BID0841-BLK1)

Prepared: 04/15/25 Analyzed: 04/16/25

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BID0841-BS1)

Prepared: 04/15/25 Analyzed: 04/16/25

Chromium, Hexavalent 23.0 0.30 mg/kg wet 25.3 91.2 80-120

Duplicate (BID0841-DUP1)

Source: 2504183-21

Prepared: 04/15/25 Analyzed: 04/16/25

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BID0841-MS1)

Source: 2504183-21

Prepared: 04/15/25 Analyzed: 04/16/25

Chromium, Hexavalent 25.1 0.30 mg/kg dry 27.0 ND 93.0 75-125

Matrix Spike Dup (BID0841-MSD1)

Source: 2504183-21

Prepared: 04/15/25 Analyzed: 04/16/25

Chromium, Hexavalent 26.6 0.30 mg/kg dry 27.3 ND 97.4 75-125 5.62 20

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Tasman Geosciences
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
 Project Number: UWRWE-A4371-AES
 Project Manager: Andy Sagen

Reported:
 05/29/25 09:24

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

Summit Scientific

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

Batch BID0625 - General Preparation

Blank (BID0625-BLK1)

Prepared: 04/10/25 Analyzed: 04/11/25

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

LCS (BID0625-BS1)

Prepared: 04/10/25 Analyzed: 04/11/25

Calcium	4.62	0.0500	mg/L wet	5.00	92.4	70-130
Magnesium	5.48	0.0500	"	5.00	110	70-130
Sodium	5.29	0.0500	"	5.00	106	70-130

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Tasman Geosciences
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D

Project Number: UWRWE-A4371-AES
 Project Manager: Andy Sagen

Reported:
 05/29/25 09:24

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 BID0754 - General Preparation

Duplicate (BID0754-DUP1)

Source: 2504165-02

Prepared & Analyzed: 04/14/25

% Solids	88.6		%		88.9			0.407	20	
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Tasman Geosciences
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D
 Project Number: UWRWE-A4371-AES
 Project Manager: Andy Sagen

Reported:
 05/29/25 09:24

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 BID0627 - General Preparation

Blank (BID0627-BLK1)

Prepared: 04/10/25 Analyzed: 04/11/25

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BID0627-BS1)

Prepared: 04/10/25 Analyzed: 04/11/25

Specific Conductance (EC) 0.148 0.0100 mmhos/cm 0.150 98.5 95-105

Duplicate (BID0627-DUP1)

Source: 2504188-01

Prepared: 04/10/25 Analyzed: 04/11/25

Specific Conductance (EC) 0.618 0.0100 mmhos/cm 0.621 0.339 20

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Tasman Geosciences
 4725 Independence St.
 Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D

Project Number: UWRWE-A4371-AES
 Project Manager: Andy Sagen

Reported:
 05/29/25 09:24

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 BID0626 - General Preparation

LCS (BID0626-BS1)

Prepared: 04/10/25 Analyzed: 04/11/25

pH	9.14	pH Units	9.18	99.6	95-105
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Duplicate (BID0626-DUP1)

Source: 2504188-01

Prepared: 04/10/25 Analyzed: 04/11/25

pH	8.44	pH Units	8.63	2.23	20
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Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Thistle Down B31-20D

Project Number: UWRWE-A4371-AES
Project Manager: Andy Sagen

Reported:
05/29/25 09:24

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.
- QR-01 Analyses are not controlled on RPD values from sample concentrations below the reporting limit. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference