

Flowline Closure Checklist


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

Additional Attachments:		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure
Site Name & ECMC Facility Number: Watkins 13-05		Date: 2/29/2024				Remediation Project #: 31448		
Associated Wells:		Age of Site:				Number of Photos Attached: 12		
Starting point: (GPS coordinates and descriptions) 40.318342, -104.506383								
End point: (GPS coordinates and descriptions) 40.313702, -104.505244								
USCS Soil Type: SM - Silty Sand					Estimated Depth to Groundwater: >4 ft			
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None Observed								
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None Observed								
Flowlines								
Flowline type	Oil / Gas/ Water							
Depth	4 ft							
Age	-							
Length	2978 ft							
Construction Material	Steel							
Were flowlines pulled?	Yes							
Visual Integrity of lines	Good							
Visual impacts if trenched	None							
PID Readings if trenched	0.0 - 51.7 ppm							
Sample taken? Location/Sample ID#	Yes, see below							
Photo Number(s)	1-12							
<p>Other observations regarding on location flowlines:</p> <p>Samples taken at the wellhead and the separator of the Flowline (FL01-A & FL01-B) as well as samples taken along the flowline at directional changes (FL01-C, FL01-E, FL01-F, FL01-J & FL01-K). The flowline was also field screened at (FL01-D, FL01-G, FL01-H, FL01-I & FL01-L). Sample FL01-H was field screened but is not seen pictured below. An additional lab sample was taken at FL01-M. A portion of the flowline was ABIP between FL01-L and FL01-M due to its proximity to a buried water line. This portion of the line has been cut and capped. Sample summary below accounts for background samples collected during site assessment.</p>								
Summary								
Was impacted soil identified? No								
Total number of samples field screened: 14					Total number of samples collected: 9			
Highest PID Reading: 51.7					Total number of samples submitted to lab for analysis: 9			
If more than 10 cubic yards of impacted soil were observed:								
Vertical extent:					Estimated spill volume:			
Lateral extent:					Volume of soil removed:			
Is additional investigation required?								
Was groundwater encountered during the investigation? No								
Measured depth to groundwater:					Was remedial groundwater removal conducted?			
Date Groundwater was encountered:					Commencement date of removal:			
Sheen on groundwater?					Volume of groundwater removed prior to sampling:			
Free product observed?					Volume of groundwater removed post sampling:			
Total number of samples collected:					Total Volume of groundwater removed:			
Total number of samples submitted to lab for analysis:								


Photographic Log

											
Equipment ID: FL01-C@2'		Equipment Type:		Equipment ID: FL01-D@3'		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					

Photographic Log

							
Equipment ID: BKG01@2'		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log

											
Equipment ID: FL01-C@2'		Equipment Type: Flowline		Equipment ID: FL01-D@3'		Equipment Type: Flowline					
Material: Steel		Volume:		Contents:		Material: Steel		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions: PHOTO TAKEN BEFORE FLOWLINE WAS PULLED					

Photographic Log

							
Equipment ID: FL01-E@2'		Equipment Type: Flowline		Equipment ID: FL01-F@4'		Equipment Type: Flowline	
Material: Steel		Volume:		Material: Steel		Volume:	
		Contents:				Contents:	
Notes/Conditions: PHOTO TAKEN BEFORE FLOWLINE WAS PULLED				Notes/Conditions: PHOTO TAKEN BEFORE FLOWLINE WAS PULLED			

Photographic Log

							
Equipment ID: FL01-G@4'		Equipment Type: Flowline		Equipment ID: FL01-A@3.5'		Equipment Type: Flowline	
Material: Steel		Volume:		Material: Steel		Volume:	
Contents:				Contents:			
Notes/Conditions: PHOTO TAKEN BEFORE FLOWLINE WAS PULLED				Notes/Conditions: PHOTO FACING WEST			

Photographic Log

											
Equipment ID: FL01-M@3.5'		Equipment Type: Flowline		Equipment ID: FL01-L@3.5'		Equipment Type: Flowline					
Material: Steel		Volume:		Contents:		Material: Steel		Volume:		Contents:	
Notes/Conditions: PHOTO FACING NORTH						Notes/Conditions: PHOTO FACING NORTH					

Photographic Log

											
Equipment ID: FL01-K@3.5'		Equipment Type: Flowline		Equipment ID: FL01-J@3.5'		Equipment Type: Flowline					
Material: Steel		Volume:		Contents:		Material: Steel		Volume:		Contents:	
Notes/Conditions: PHOTO FACING NORTH						Notes/Conditions: PHOTO FACING WEST					

Photographic Log



											
Equipment ID: FL01-I@3.5'		Equipment Type: Flowline		Equipment ID: 8KG02@3',4'		Equipment Type: Flowline					
Material: Steel		Volume:		Contents:		Material: Steel		Volume:		Contents:	
Notes/Conditions: PHOTO FACING WEST						Notes/Conditions: PHOTO FACING WEST					

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - WATKINS 13-05

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
FL01-C@2'	02/26/24	51.7	No Staining	Slight HC Odor	Lab	40.31804922	-104.5064078	0.7
FL01-D@3'	02/26/24	0.3	No Staining	No Odor	Grab	40.31802676	-104.5072791	0.7
FL01-E@2'	02/29/24	0.5	No Staining	No Odor	Lab	40.31795990	-104.5080801	0.9
FL01-F@4'	02/29/24	0.0	No Staining	No Odor	Lab	40.31750996	-104.5081597	0.7
FL01-G@4'	02/29/24	0.1	No Staining	No Odor	Grab	40.31670048	-104.5082094	0.9
FL01-A@3.5'	03/01/24	0.3	No Staining	No Odor	Lab	40.31369490	-104.5052556	1.5
FL01-H@3.5'	03/01/24	0.6	No Staining	No Odor	Grab	*40.315693	*-104.508178	NC
FL01-I@3.5'	03/01/24	0.6	No Staining	No Odor	Grab	40.31454263	-104.5082085	0.9
FL01-J@3.5'	03/01/24	0.5	No Staining	No Odor	Lab	40.31375974	-104.5082095	0.9
FL01-K@3.5'	03/01/24	0.1	No Staining	No Odor	Lab	40.31365917	-104.5072356	0.9
FL01-L@3.5'	03/01/24	0.7	No Staining	No Odor	Grab	40.31367177	-104.5063607	0.8
FL01-M@3.5'	03/01/24	0.1	No Staining	No Odor	Lab	40.31367366	-104.5058313	0.8
BKG01@2'	02/26/24	0.0	No Staining	No Odor	Lab	40.31776484	-104.5061261	0.7
BKG02@3'	03/01/24	0.9	No Staining	No Odor	Lab	40.31677286	-104.5081275	0.8
BKG02@4'	03/01/24	0.9	No Staining	No Odor	Lab	40.31677286	-104.5081275	0.8

Notes:

PID = Photoionization detector

* = Latitude and longitude approximated based on field notes

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

NC = Not Collected

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

TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - WATKINS 13-05

Soil Sample ID	Date	¹ Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ^{1,2}		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^{1,2,3}		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01-C@2'	02/26/24	<0.0020	0.021	0.0058	0.087	0.031	0.015	<0.0038	0.61	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0475
FL01-E@2'	02/29/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-F@4'	02/29/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-A@3.5'	03/01/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-J@3.5'	03/01/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-K@3.5'	03/01/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-M@3.5'	03/01/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
SSR ^{1,2}		6 - 8.3	<6	<4mmhos/cm	2
FL01-C@2'	02/26/24	8.20	5.10	0.924	<2.00
FL01-E@2'	02/29/24	7.15	2.41	1.25	<2.00
FL01-F@4'	02/29/24	8.22	2.25	0.563	<2.00
FL01-A@3.5'	03/01/24	8.55	2.36	0.540	<2.00
FL01-J@3.5'	03/01/24	8.04	3.73	1.18	<2.00
FL01-K@3.5'	03/01/24	8.58	6.59	0.777	<2.00
FL01-M@3.5'	03/01/24	8.65	5.24	0.862	<2.00
BKG02@3'	03/01/24	8.14	5.06	1.03	<2.00
BKG02@4'	03/01/24	8.48	4.45	0.591	<2.00

Soil Sample ID	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ^{1,2}		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^{1,2,3}		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01-C@2'	02/26/24	3.49	95.7	0.237	<0.30	6.29	10.3	5.41	<0.260	0.0443	24.1
FL01-E@2'	02/29/24	3.17	92.7	0.280	<0.30	6.53	9.84	5.10	<0.260	0.0438	21.7
FL01-F@4'	02/29/24	3.51	86.4	0.277	<0.30	6.41	9.74	5.03	<0.260	0.0503	24.0
FL01-A@3.5'	03/01/24	2.01	76.0	<0.200	<0.30	5.54	7.84	4.09	<0.260	0.0271	18.7
FL01-J@3.5'	03/01/24	2.89	81.7	0.212	<0.30	5.99	8.13	4.88	<0.260	0.0394	23.9
FL01-K@3.5'	03/01/24	1.32	48.4	<0.200	<0.30	3.56	4.00	2.85	<0.260	<0.0200	12.7
FL01-M@3.5'	03/01/24	2.74	113	<0.200	<0.30	5.64	7.41	5.22	<0.260	0.0293	22.6
BKG01@2'	02/26/24	2.20	69.8	0.243	<0.30	7.24	8.24	4.37	0.269	0.0333	33.6
BKG02@3'	03/01/24	2.72	88.3	<0.200	<0.30	6.78	7.29	4.52	<0.260	0.0334	24.3
BKG02@4'	03/01/24	1.29	33.4	<0.200	<0.30	2.90	3.23	2.70	<0.260	<0.0200	10.8

- Notes:
- Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
 - Soil Screening Levels (SSL) and Soil Suitability for Reclamation (SSR) standards referenced
 - SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

ECMC = Energy and Carbon Management Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millmhos per centimeter

mg/L = Milligrams per liter

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

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

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

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

Benz(a) = Benzo(a)anthracene

Benzo(b) = Benzo(b)fluoranthene

Benzo(k) = Benzo(k)fluoranthene

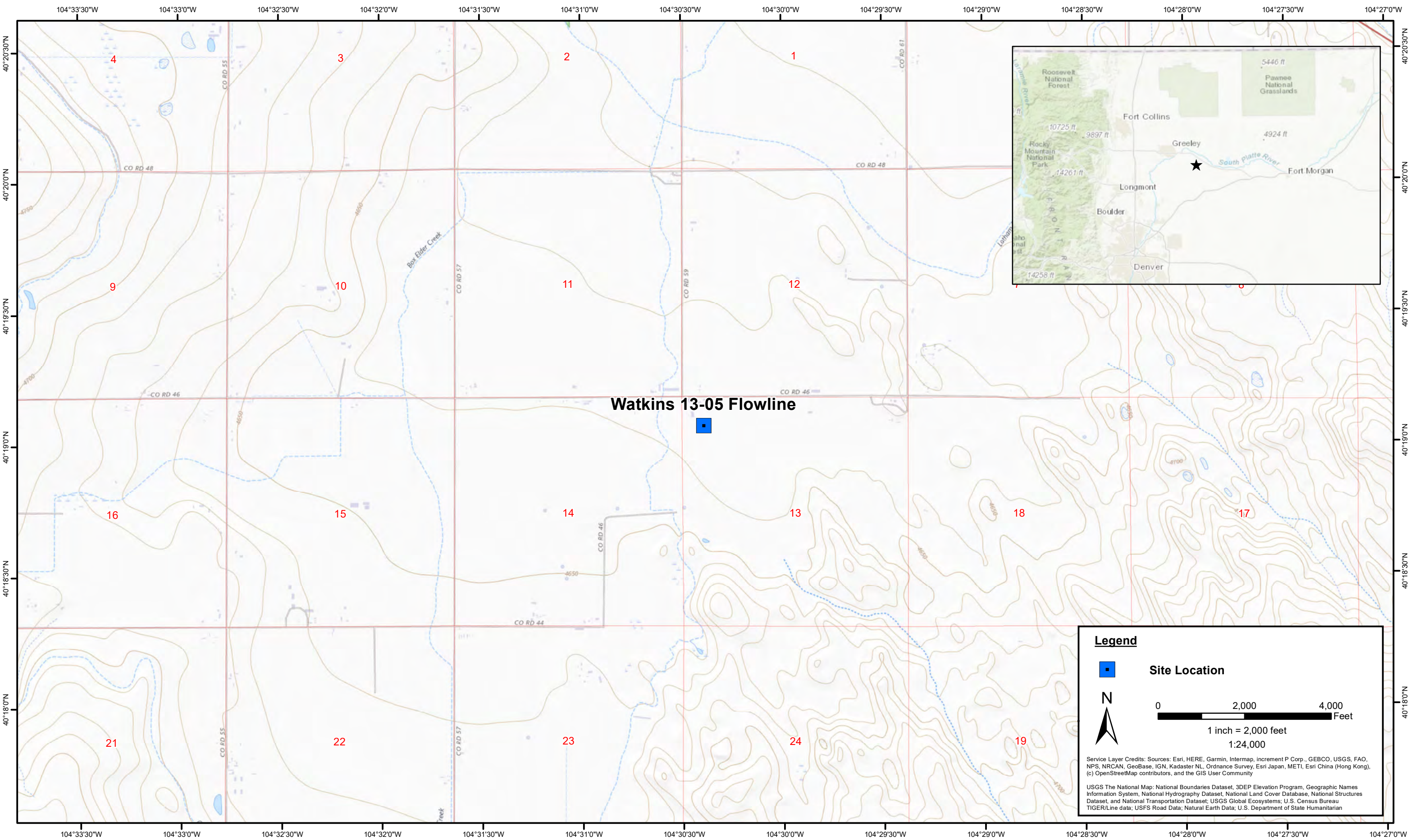
Benzo(a) = Benzo(a)pyrene

A,H = Dibenzo(a,h)anthracene

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

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene



DATE:	March 2024
DESIGNED BY:	J. Whritenour
DRAWN BY:	J. Woffinden

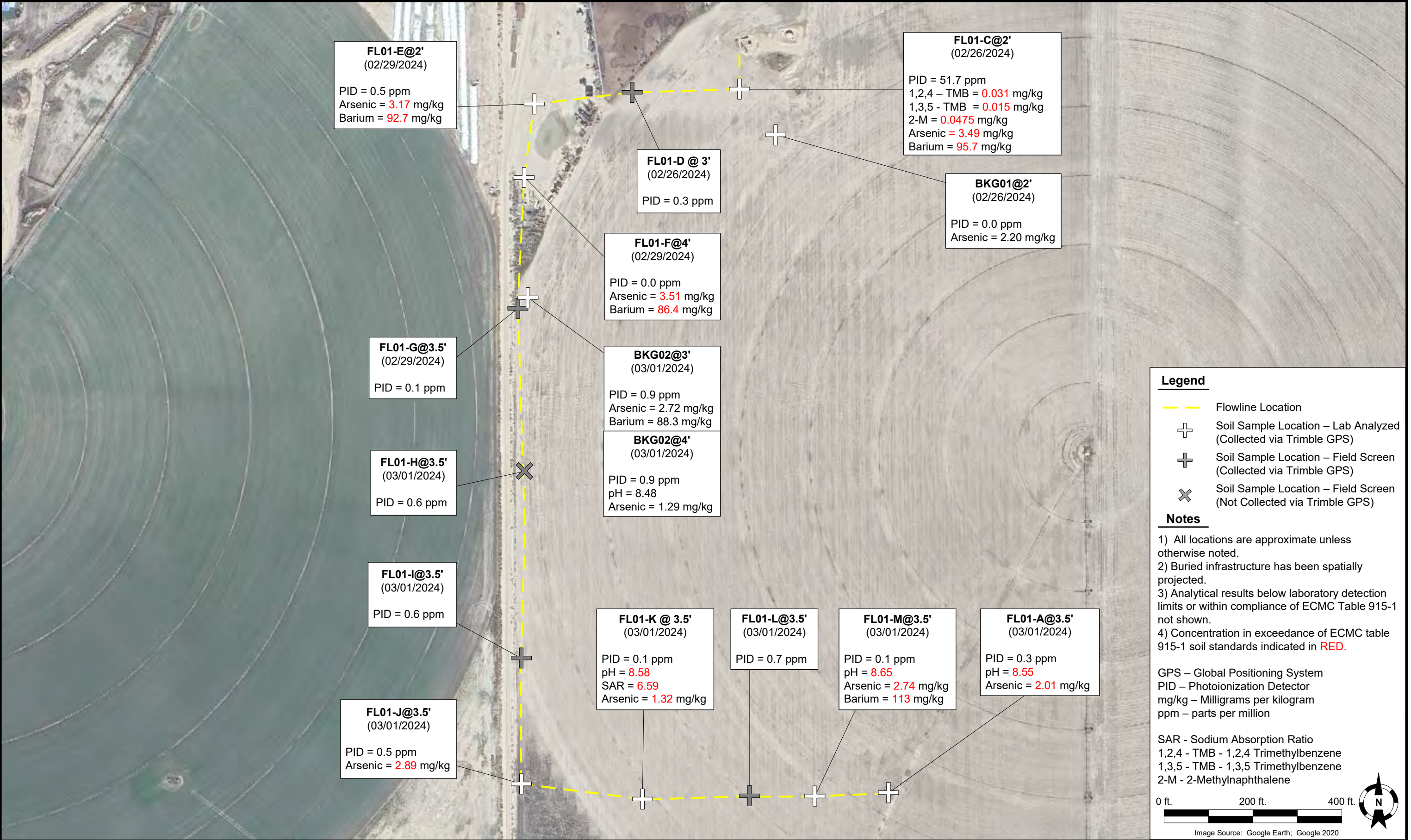


Tasman, Inc.
6855 W. 119th Ave
Broomfield, CO 80020

Noble Energy, Inc - DJ Basin
Watkins 13-05 Flowline
NWNW, Section 13, Township 4 North, Range 64 West
Weld County, Colorado

Site Location Map

Figure
1



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 25, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

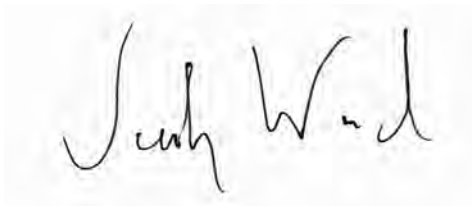
Broomfield, CO 80020

RE: Noble - Watkins 13-05

Work Order #2403040

Enclosed are the results of analyses for samples received by Summit Scientific on 03/01/24 17:39. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-J@3.5'	2403040-01	Soil	03/01/24 10:40	03/01/24 17:39
FL01-K@3.5'	2403040-02	Soil	03/01/24 10:34	03/01/24 17:39
FL01-M@3.5'	2403040-03	Soil	03/01/24 09:56	03/01/24 17:39
FL01-A@3.5'	2403040-04	Soil	03/01/24 09:32	03/01/24 17:39
BKG02@3'	2403040-05	Soil	03/01/24 11:25	03/01/24 17:39
BKG02@4'	2403040-06	Soil	03/01/24 11:30	03/01/24 17:39

Summit Scientific

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

SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2403040	

Send Data To:		Send Invoice To:
Client: Noble / Tasman	Project Manager: Jake Whritenour	Company: Chevron
Address: 6855 W. 119th Ave	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location:
City/State/Zip: Broomfield, CO 80020		AFE#: UNRWE-A3530-ABN
Phone: 860-830-3839	Project Name: Watkins 13-05	PO/Billing Codes:
Sampler Name: Sylvie Bousquet	Project Number: 31448	Contact: Miguel Barron

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS	Metals - 915	HOLD	
1	FL01-J@3.5'	3-1-24	10:40	3			X			X			X	X	X	X	X	X		pH, EC, SAR by saturated paste
2	FL01-K@3.5'		10:34																	
3	FL01-M@3.5'		9:56																	
4	FL01-A@3.5'		9:32																	
5	BK601@3'		11:25																	
6	BK602@4'		11:30																	
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <i>Sylvie Bousquet</i>	Date/Time: 3-2-24 1300	Received by: Tasman Lock Box	Date/Time: 3-1-24 1300	TAT Business Days	Field DO	Notes:
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: 3-2-24 1729	Received by: <i>[Signature]</i>	Date/Time: 3-2-24 1739	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 8.9	Corrected Temperature: 8	IR gun #:		HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# **2403040**Client: Noble GasmanClient Project ID: Watkins 13-05Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☐

Other

☐

Temp (°C)

8.9

Thermometer #

1

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

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

 Cassidian Printed Name

Date/Time

3.1.24**12:45**



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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-J@3.5'
2403040-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHC0082	03/05/24	03/06/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0285	71.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0436	109 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0409	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0084	03/05/24	03/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	7.66	61.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-J@3.5'
2403040-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHC0044	03/04/24	03/08/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0253	76.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0267	80.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHC0445	03/15/24	03/19/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-J@3.5'
2403040-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.89	0.200	mg/kg dry	1	BHC0536	03/15/24	03/20/24	EPA 6020B
Barium	81.7	0.400	"	"	"	"	"	"
Cadmium	0.212	0.200	"	"	"	"	"	"
Copper	5.99	0.400	"	"	"	"	"	"
Lead	8.13	0.200	"	"	"	"	"	"
Nickel	4.88	0.400	"	"	"	"	"	"
Silver	0.0394	0.0200	"	"	"	"	"	"
Zinc	23.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0558	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	32.8	0.0500	mg/L dry	1	BHC0495	03/15/24	03/21/24	EPA 6020B	
Magnesium	15.2	0.0500	"	"	"	"	"	"	
Sodium	103	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.73	0.00100	units	1	BHC0831	03/21/24	03/21/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/24 10:40**

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-J@3.5'
2403040-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	93.4	%	1	BHC0386	03/13/24	03/16/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.18	0.0100	mmhos/cm	1	BHC0497	03/15/24	03/19/24	EPA 120.1	

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

Date Sampled: **03/01/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.04		pH Units	1	BHC0496	03/15/24	03/19/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-K@3.5'
2403040-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0082	03/05/24	03/06/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0472	118 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0374	93.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0401	100 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0084	03/05/24	03/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.40	67.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-K@3.5'
2403040-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHC0044	03/04/24	03/08/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0209	62.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0271	81.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHC0445	03/15/24	03/19/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-K@3.5'
2403040-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.32	0.200	mg/kg dry	1	BHC0536	03/15/24	03/20/24	EPA 6020B
Barium	48.4	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.56	0.400	"	"	"	"	"	"
Lead	4.00	0.200	"	"	"	"	"	"
Nickel	2.85	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	12.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0558	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	14.2	0.0500	mg/L dry	1	BHC0495	03/15/24	03/21/24	EPA 6020B	
Magnesium	5.40	0.0500	"	"	"	"	"	"	
Sodium	115	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.59	0.00100	units	1	BHC0831	03/21/24	03/21/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-K@3.5'
2403040-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.3		%	1	BHC0386	03/13/24	03/16/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.777	0.0100	mmhos/cm	1	BHC0497	03/15/24	03/19/24	EPA 120.1	

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

Date Sampled: **03/01/24 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.58		pH Units	1	BHC0496	03/15/24	03/19/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-M@3.5'
2403040-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0082	03/05/24	03/06/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0402	100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0419	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0084	03/05/24	03/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.73	61.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-M@3.5'
2403040-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHC0044	03/04/24	03/08/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0239	71.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0264	79.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHC0445	03/15/24	03/19/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-M@3.5'
2403040-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.74	0.200	mg/kg dry	1	BHC0536	03/15/24	03/20/24	EPA 6020B
Barium	113	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.64	0.400	"	"	"	"	"	"
Lead	7.41	0.200	"	"	"	"	"	"
Nickel	5.22	0.400	"	"	"	"	"	"
Silver	0.0293	0.0200	"	"	"	"	"	"
Zinc	22.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0558	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	47.8	0.0500	mg/L dry	1	BHC0495	03/15/24	03/21/24	EPA 6020B	
Magnesium	11.2	0.0500	"	"	"	"	"	"	
Sodium	155	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.24	0.00100	units	1	BHC0831	03/21/24	03/21/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-M@3.5'
2403040-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	71.0		%	1	BHC0386	03/13/24	03/16/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.862	0.0100	mmhos/cm	1	BHC0497	03/15/24	03/19/24	EPA 120.1	

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

Date Sampled: **03/01/24 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.65		pH Units	1	BHC0496	03/15/24	03/19/24	EPA 9045D	

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-A@3.5'
2403040-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0082	03/05/24	03/06/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0446	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0356	89.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0396	99.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0084	03/05/24	03/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.06	56.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-A@3.5'
2403040-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHC0044	03/04/24	03/08/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0158	47.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0200	60.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHC0445	03/15/24	03/19/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-A@3.5'
2403040-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.01	0.200	mg/kg dry	1	BHC0536	03/15/24	03/20/24	EPA 6020B
Barium	76.0	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.54	0.400	"	"	"	"	"	"
Lead	7.84	0.200	"	"	"	"	"	"
Nickel	4.09	0.400	"	"	"	"	"	"
Silver	0.0271	0.0200	"	"	"	"	"	"
Zinc	18.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0558	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	29.6	0.0500	mg/L dry	1	BHC0495	03/15/24	03/21/24	EPA 6020B	
Magnesium	5.89	0.0500	"	"	"	"	"	"	
Sodium	53.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.36	0.00100	units	1	BHC0831	03/21/24	03/21/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

FL01-A@3.5'
2403040-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.0		%	1	BHC0386	03/13/24	03/16/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.540	0.0100	mmhos/cm	1	BHC0497	03/15/24	03/19/24	EPA 120.1	

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

Date Sampled: **03/01/24 09:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.55		pH Units	1	BHC0496	03/15/24	03/19/24	EPA 9045D	

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

BKG02@3'
2403040-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/24 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHC0445	03/15/24	03/19/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/01/24 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	2.72	0.200	mg/kg dry	1	BHC0536	03/15/24	03/20/24	EPA 6020B	
Barium	88.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	6.78	0.400	"	"	"	"	"	"	
Lead	7.29	0.200	"	"	"	"	"	"	
Nickel	4.52	0.400	"	"	"	"	"	"	
Silver	0.0334	0.0200	"	"	"	"	"	"	
Zinc	24.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/24 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0558	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/01/24 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	25.5	0.0500	mg/L dry	1	BHC0495	03/15/24	03/21/24	EPA 6020B	
Magnesium	10.8	0.0500	"	"	"	"	"	"	
Sodium	121	0.0500	"	"	"	"	"	"	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

BKG02@3'
2403040-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **03/01/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.06	0.00100	units	1	BHC0831	03/21/24	03/21/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.9		%	1	BHC0386	03/13/24	03/16/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.03	0.0100	mmhos/cm	1	BHC0497	03/15/24	03/19/24	EPA 120.1	

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

Date Sampled: **03/01/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.14		pH Units	1	BHC0496	03/15/24	03/19/24	EPA 9045D	

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

BKG02@4'
2403040-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHC0445	03/15/24	03/19/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/01/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	1.29	0.200	mg/kg dry	1	BHC0536	03/15/24	03/20/24	EPA 6020B	
Barium	33.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.90	0.400	"	"	"	"	"	"	
Lead	3.23	0.200	"	"	"	"	"	"	
Nickel	2.70	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	10.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0558	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/01/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	12.8	0.0500	mg/L dry	1	BHC0495	03/15/24	03/21/24	EPA 6020B	
Magnesium	5.39	0.0500	"	"	"	"	"	"	
Sodium	75.3	0.0500	"	"	"	"	"	"	

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

BKG02@4'
2403040-06 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **03/01/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.45	0.00100	units	1	BHC0831	03/21/24	03/21/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.5		%	1	BHC0386	03/13/24	03/16/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.591	0.0100	mmhos/cm	1	BHC0497	03/15/24	03/19/24	EPA 120.1	

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

Date Sampled: **03/01/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.48		pH Units	1	BHC0496	03/15/24	03/19/24	EPA 9045D	

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHC0082 - EPA 5030 Soil MS

Blank (BHC0082-BLK1)

Prepared & Analyzed: 03/05/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0480		"	0.0400		120	50-150			
Surrogate: Toluene-d8	0.0365		"	0.0400		91.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		101	50-150			

LCS (BHC0082-BS1)

Prepared & Analyzed: 03/05/24

Benzene	0.113	0.0020	mg/kg	0.100		113	70-130			
Toluene	0.122	0.0050	"	0.100		122	70-130			
Ethylbenzene	0.118	0.0050	"	0.100		118	70-130			
m,p-Xylene	0.233	0.010	"	0.200		116	70-130			
o-Xylene	0.113	0.0050	"	0.100		113	70-130			
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100		109	70-130			
1,3,5-Trimethylbenzene	0.111	0.0050	"	0.100		111	70-130			
Naphthalene	0.110	0.0038	"	0.100		110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0479		"	0.0400		120	50-150			
Surrogate: Toluene-d8	0.0372		"	0.0400		92.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.3	50-150			

Matrix Spike (BHC0082-MS1)

Source: 2403036-01

Prepared & Analyzed: 03/05/24

Benzene	0.0978	0.0020	mg/kg	0.100	ND	97.8	70-130			
Toluene	0.109	0.0050	"	0.100	ND	109	70-130			
Ethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130			
m,p-Xylene	0.213	0.010	"	0.200	ND	107	70-130			
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130			
1,2,4-Trimethylbenzene	0.0983	0.0050	"	0.100	ND	98.3	70-130			
1,3,5-Trimethylbenzene	0.0994	0.0050	"	0.100	ND	99.4	70-130			
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0424		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0385		"	0.0400		96.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.0	50-150			

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

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

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

Batch BHC0082 - EPA 5030 Soil MS

Matrix Spike Dup (BHC0082-MSD1)	Source: 2403036-01			Prepared & Analyzed: 03/05/24						
Benzene	0.0982	0.0020	mg/kg	0.100	ND	98.2	70-130	0.398	30	
Toluene	0.109	0.0050	"	0.100	ND	109	70-130	0.275	30	
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	2.79	30	
m,p-Xylene	0.220	0.010	"	0.200	ND	110	70-130	2.83	30	
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130	3.58	30	
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	2.14	30	
1,3,5-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	1.26	30	
Naphthalene	0.105	0.0038	"	0.100	ND	105	70-130	3.38	30	
Surrogate: 1,2-Dichloroethane-d4	0.0465		"	0.0400		116	50-150			
Surrogate: Toluene-d8	0.0369		"	0.0400		92.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150			

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHC0084 - EPA 3550A

Blank (BHC0084-BLK1)

Prepared: 03/05/24 Analyzed: 03/06/24

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

LCS (BHC0084-BS1)

Prepared: 03/05/24 Analyzed: 03/06/24

C10-C28 (DRO)	419	50	mg/kg	500		83.9	70-130			
Surrogate: o-Terphenyl	9.96		"	12.5		79.7	30-150			

Matrix Spike (BHC0084-MS1)

Source: 2403036-01

Prepared: 03/05/24 Analyzed: 03/06/24

C10-C28 (DRO)	341	50	mg/kg	500	14.2	65.3	70-130			QM-07
Surrogate: o-Terphenyl	7.90		"	12.5		63.2	30-150			

Matrix Spike Dup (BHC0084-MSD1)

Source: 2403036-01

Prepared: 03/05/24 Analyzed: 03/06/24

C10-C28 (DRO)	358	50	mg/kg	500	14.2	68.8	70-130	4.99	20	QM-07
Surrogate: o-Terphenyl	9.06		"	12.5		72.5	30-150			

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHC0044 - EPA 5030 Soil MS

Blank (BHC0044-BLK1)

Prepared: 03/04/24 Analyzed: 03/07/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0366		"	0.0333		110	40-150			
Surrogate: Fluoranthene-d10	0.0402		"	0.0333		121	40-150			

LCS (BHC0044-BS1)

Prepared: 03/04/24 Analyzed: 03/07/24

Acenaphthene	0.0400	0.00500	mg/kg	0.0333	120	31-137
Anthracene	0.0387	0.00500	"	0.0333	116	30-120
Benzo (a) anthracene	0.0386	0.00500	"	0.0333	116	30-120
Benzo (a) pyrene	0.0337	0.00500	"	0.0333	101	30-120
Benzo (b) fluoranthene	0.0356	0.00500	"	0.0333	107	30-120
Benzo (k) fluoranthene	0.0369	0.00500	"	0.0333	111	30-120
Chrysene	0.0372	0.00500	"	0.0333	112	30-120
Dibenz (a,h) anthracene	0.0329	0.00500	"	0.0333	98.7	30-120
Fluoranthene	0.0369	0.00500	"	0.0333	111	30-120
Fluorene	0.0381	0.00500	"	0.0333	114	30-120
Indeno (1,2,3-cd) pyrene	0.0207	0.00500	"	0.0333	62.1	30-120
Pyrene	0.0385	0.00500	"	0.0333	116	35-142
1-Methylnaphthalene	0.0375	0.00500	"	0.0333	112	35-142
2-Methylnaphthalene	0.0397	0.00500	"	0.0333	119	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0374		"	0.0333	112	40-150
Surrogate: Fluoranthene-d10	0.0391		"	0.0333	117	40-150

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHC0044 - EPA 5030 Soil MS

Matrix Spike (BHC0044-MS1)

Source: 2402354-02

Prepared: 03/04/24 Analyzed: 03/07/24

Acenaphthene	0.0272	0.00500	mg/kg	0.0333	ND	81.8	31-137		
Anthracene	0.0262	0.00500	"	0.0333	ND	78.6	30-120		
Benzo (a) anthracene	0.0280	0.00500	"	0.0333	ND	83.9	30-120		
Benzo (a) pyrene	0.0226	0.00500	"	0.0333	ND	67.9	30-120		
Benzo (b) fluoranthene	0.0233	0.00500	"	0.0333	ND	69.9	30-120		
Benzo (k) fluoranthene	0.0232	0.00500	"	0.0333	ND	69.6	30-120		
Chrysene	0.0268	0.00500	"	0.0333	ND	80.4	30-120		
Dibenz (a,h) anthracene	0.0198	0.00500	"	0.0333	ND	59.3	30-120		
Fluoranthene	0.0279	0.00500	"	0.0333	ND	83.6	30-120		
Fluorene	0.0271	0.00500	"	0.0333	ND	81.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333	ND	42.5	30-120		
Pyrene	0.0294	0.00500	"	0.0333	ND	88.2	35-142		
1-Methylnaphthalene	0.0310	0.00500	"	0.0333	ND	93.1	15-130		
2-Methylnaphthalene	0.0326	0.00500	"	0.0333	ND	97.7	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0288		"	0.0333		86.5	40-150		
Surrogate: Fluoranthene-d10	0.0283		"	0.0333		84.9	40-150		

Matrix Spike Dup (BHC0044-MSD1)

Source: 2402354-02

Prepared: 03/04/24 Analyzed: 03/07/24

Acenaphthene	0.0245	0.00500	mg/kg	0.0333	ND	73.5	31-137	10.6	30
Anthracene	0.0243	0.00500	"	0.0333	ND	72.9	30-120	7.55	30
Benzo (a) anthracene	0.0260	0.00500	"	0.0333	ND	78.0	30-120	7.27	30
Benzo (a) pyrene	0.0207	0.00500	"	0.0333	ND	62.2	30-120	8.63	30
Benzo (b) fluoranthene	0.0214	0.00500	"	0.0333	ND	64.2	30-120	8.54	30
Benzo (k) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.4	30-120	9.37	30
Chrysene	0.0243	0.00500	"	0.0333	ND	73.0	30-120	9.70	30
Dibenz (a,h) anthracene	0.0169	0.00500	"	0.0333	ND	50.6	30-120	15.7	30
Fluoranthene	0.0256	0.00500	"	0.0333	ND	76.7	30-120	8.55	30
Fluorene	0.0267	0.00500	"	0.0333	ND	80.1	30-120	1.48	30
Indeno (1,2,3-cd) pyrene	0.0167	0.00500	"	0.0333	ND	50.1	30-120	16.4	30
Pyrene	0.0270	0.00500	"	0.0333	ND	81.0	35-142	8.57	30
1-Methylnaphthalene	0.0267	0.00500	"	0.0333	ND	80.2	15-130	14.9	50
2-Methylnaphthalene	0.0284	0.00500	"	0.0333	ND	85.3	15-130	13.6	50
Surrogate: 2-Methylnaphthalene-d10	0.0231		"	0.0333		69.3	40-150		
Surrogate: Fluoranthene-d10	0.0262		"	0.0333		78.5	40-150		

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

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

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

Batch BHC0445 - EPA 3050B

Blank (BHC0445-BLK1)

Prepared: 03/15/24 Analyzed: 03/18/24

Boron ND 2.00 mg/L

LCS (BHC0445-BS1)

Prepared: 03/15/24 Analyzed: 03/18/24

Boron 5.03 2.00 mg/L 5.00 101 80-120

Duplicate (BHC0445-DUP1)

Source: 2403030-03

Prepared: 03/15/24 Analyzed: 03/18/24

Boron 0.0333 2.00 mg/L 0.0539 47.3 20 QR-01

Matrix Spike (BHC0445-MS1)

Source: 2403030-03

Prepared: 03/15/24 Analyzed: 03/18/24

Boron 4.34 2.00 mg/L 5.00 0.0539 85.7 75-125

Matrix Spike Dup (BHC0445-MSD1)

Source: 2403030-03

Prepared: 03/15/24 Analyzed: 03/18/24

Boron 4.95 2.00 mg/L 5.00 0.0539 97.9 75-125 13.1 25

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHC0536 - EPA 3050B

Blank (BHC0536-BLK1)

Prepared: 03/15/24 Analyzed: 03/20/24

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"
Selenium	ND	0.260	"

LCS (BHC0536-BS1)

Prepared: 03/15/24 Analyzed: 03/20/24

Arsenic	39.0	0.200	mg/kg wet	40.0	97.6	80-120
Barium	39.1	0.400	"	40.0	97.6	80-120
Cadmium	1.96	0.200	"	2.00	98.1	80-120
Copper	43.0	0.400	"	40.0	108	80-120
Lead	19.6	0.200	"	20.0	97.8	80-120
Nickel	42.5	0.400	"	40.0	106	80-120
Silver	1.97	0.0200	"	2.00	98.6	80-120
Zinc	42.7	0.400	"	40.0	107	80-120
Selenium	4.60	0.260	"	4.00	115	80-120

Duplicate (BHC0536-DUP1)

Source: 2403039-01

Prepared: 03/15/24 Analyzed: 03/20/24

Arsenic	5.90	0.200	mg/kg dry	6.23	5.40	20
Barium	162	0.400	"	172	6.23	20
Cadmium	0.365	0.200	"	0.383	4.85	20
Copper	9.20	0.400	"	8.80	4.55	20
Lead	16.2	0.200	"	15.1	6.79	20
Nickel	9.05	0.400	"	9.37	3.38	20
Silver	0.0625	0.0200	"	0.0749	18.1	20
Zinc	29.1	0.400	"	29.3	0.966	20
Selenium	0.223	0.260	"	0.253	12.4	20

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHC0536 - EPA 3050B

Matrix Spike (BHC0536-MS1)		Source: 2403039-01			Prepared: 03/15/24 Analyzed: 03/20/24					
Arsenic	50.9	0.200	mg/kg dry	47.7	6.23	93.6	75-125			
Barium	209	0.400	"	47.7	172	76.4	75-125			
Cadmium	2.82	0.200	"	2.39	0.383	102	75-125			
Copper	33.5	0.400	"	47.7	8.80	51.8	75-125			QM-07
Lead	41.9	0.200	"	23.9	15.1	112	75-125			
Nickel	34.2	0.400	"	47.7	9.37	52.0	75-125			QM-07
Silver	2.46	0.0200	"	2.39	0.0749	99.9	75-125			
Zinc	53.8	0.400	"	47.7	29.3	51.2	75-125			QM-07
Selenium	4.76	0.260	"	4.77	0.253	94.4	75-125			

Matrix Spike Dup (BHC0536-MSD1)		Source: 2403039-01			Prepared: 03/15/24 Analyzed: 03/20/24					
Arsenic	50.8	0.200	mg/kg dry	47.7	6.23	93.4	75-125	0.221	25	
Barium	207	0.400	"	47.7	172	73.3	75-125	0.714	25	QM-07
Cadmium	2.80	0.200	"	2.39	0.383	101	75-125	0.832	25	
Copper	33.2	0.400	"	47.7	8.80	51.2	75-125	0.869	25	QM-07
Lead	41.7	0.200	"	23.9	15.1	111	75-125	0.552	25	
Nickel	33.7	0.400	"	47.7	9.37	51.1	75-125	1.30	25	QM-07
Silver	2.45	0.0200	"	2.39	0.0749	99.6	75-125	0.330	25	
Zinc	53.3	0.400	"	47.7	29.3	50.2	75-125	0.858	25	QM-07
Selenium	4.71	0.260	"	4.77	0.253	93.3	75-125	1.18	25	

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHC0558 - 3060A Mod

Blank (BHC0558-BLK1)

Prepared: 03/16/24 Analyzed: 03/19/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHC0558-BS1)

Prepared: 03/16/24 Analyzed: 03/19/24

Chromium, Hexavalent 25.1 0.30 mg/kg wet 25.0 100 80-120

Duplicate (BHC0558-DUP1)

Source: 2403036-01

Prepared: 03/16/24 Analyzed: 03/19/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHC0558-MS1)

Source: 2403036-01

Prepared: 03/16/24 Analyzed: 03/19/24

Chromium, Hexavalent 31.6 0.30 mg/kg dry 30.9 ND 102 75-125

Matrix Spike Dup (BHC0558-MSD1)

Source: 2403036-01

Prepared: 03/16/24 Analyzed: 03/19/24

Chromium, Hexavalent 31.6 0.30 mg/kg dry 30.9 ND 102 75-125 0.00 20

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

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

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

Batch BHC0495 - General Preparation

Blank (BHC0495-BLK1)

Prepared: 03/15/24 Analyzed: 03/21/24

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

LCS (BHC0495-BS1)

Prepared: 03/15/24 Analyzed: 03/21/24

Calcium	5.21	0.0500	mg/L wet	5.00	104	70-130
Magnesium	5.12	0.0500	"	5.00	102	70-130
Sodium	5.15	0.0500	"	5.00	103	70-130

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Watkins 13-05

Project Number: UWRWE-A3530-ABN

Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

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

Summit Scientific

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

Batch BHC0386 - General Preparation

Duplicate (BHC0386-DUP1)		Source: 2403040-01			Prepared: 03/13/24 Analyzed: 03/16/24					
% Solids	93.6		%		93.4			0.293	20	

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

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

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

Batch BHC0497 - General Preparation

Blank (BHC0497-BLK1)

Prepared: 03/15/24 Analyzed: 03/19/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHC0497-BS1)

Prepared: 03/15/24 Analyzed: 03/19/24

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

Duplicate (BHC0497-DUP1)

Source: 2403032-01

Prepared: 03/15/24 Analyzed: 03/19/24

Specific Conductance (EC) 0.370 0.0100 mmhos/cm 0.373 1.05 20

Summit Scientific

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

Project: Noble - Watkins 13-05

Project Number: UWRWE-A3530-ABN

Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

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

Summit Scientific

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

Batch BHC0496 - General Preparation

LCS (BHC0496-BS1)

Prepared: 03/15/24 Analyzed: 03/19/24

pH	9.06	pH Units	9.18	98.7	95-105
----	------	----------	------	------	--------

Duplicate (BHC0496-DUP1)

Source: 2403032-01

Prepared: 03/15/24 Analyzed: 03/19/24

pH	8.23	pH Units	8.23	0.00	20
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Summit Scientific

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

Project: Noble - Watkins 13-05

Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 15:06

Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 21, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

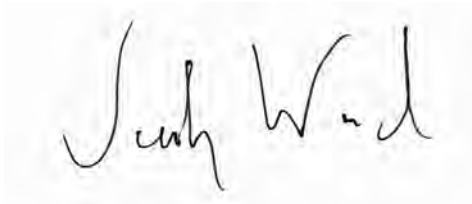
Broomfield, CO 80020

RE: Noble - Watkins 13-05

Work Order #2402534

Enclosed are the results of analyses for samples received by Summit Scientific on 02/29/24 17:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jacob Wood", is displayed on a light gray background.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Watkins 13-05

Project Number: UWRWE-A3530-ABN

Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

ANALYTICAL REPORT FOR SAMPLES

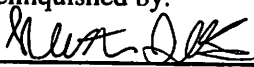

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-E@2'	2402534-01	Soil	02/29/24 11:45	02/29/24 17:45
FL01-F@4'	2402534-02	Soil	02/29/24 12:53	02/29/24 17:45

Summit Scientific

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

Client: Noble / Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W. 119th Ave		Project Manager: Jake Whritenour		Company: Chevron	
City/State/Zip: Broomfield, CO 80020		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location:	
Phone: 517-231-8618		Project Name: Watkins 13-05		AFE#: UVRWE-A3530-ARN	
Sampler Name: Hunter Jewell		Project Number:		PO/Billing Codes:	
				Contact: Miguel Barron	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	VOC - 915	TPH - 915	PAH - 915	pH,EC,SAR	Boron - HWS	Metals - 915	HOLD		
1	FL01-E @ 2'	2-9-24	1145	3			X			X			X	X	X	X	X	X		pH, EC, SAR by saturated paste	
2	FL01-F @ 4'	↓	1257	↓			↓			↓			↓	↓	↓	↓	↓	↓			
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 2-29-24 1523	Received by: Tasman Lock Box	Date/Time: 2-29-24 1523	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lock Box	Date/Time: 2-29-24 1745	Received by: 	Date/Time: 2-29-24 1745	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 8.1	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:	Standard	X Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2402534Client: Nudef rasman Client Project ID: Watkins 13-09Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.1 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Time stamps did not match
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

AS

Custodian Printed Name

2/29/24
Date/Time



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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

FL01-E@2'
2402534-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHC0009	03/01/24	03/02/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0374	93.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0376	94.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0397	99.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0048	03/04/24	03/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	7.72	61.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

FL01-E@2'
2402534-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHC0036	03/04/24	03/06/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0354	106 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0248	74.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHC0413	03/14/24	03/18/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

FL01-E@2'
2402534-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.17	0.200	mg/kg dry	1	BHC0261	03/10/24	03/15/24	EPA 6020B
Barium	92.7	0.400	"	"	"	"	"	"
Cadmium	0.280	0.200	"	"	"	"	"	"
Copper	6.53	0.400	"	"	"	"	"	"
Lead	9.84	0.200	"	"	"	"	"	"
Nickel	5.10	0.400	"	"	"	"	"	"
Silver	0.0438	0.0200	"	"	"	"	"	"
Zinc	21.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0528	03/15/24	03/18/24	EPA 7196A	

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

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	60.2	0.0500	mg/L dry	1	BHC0333	03/12/24	03/20/24	EPA 6020B	
Magnesium	25.3	0.0500	"	"	"	"	"	"	
Sodium	88.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.41	0.00100	units	1	BHC0820	03/21/24	03/21/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/29/24 11:45**

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

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

FL01-E@2'
2402534-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.8	%	1	BHC0316	03/12/24	03/13/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.25	0.0100	mmhos/cm	1	BHC0334	03/12/24	03/18/24	EPA 120.1	

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

Date Sampled: **02/29/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.15		pH Units	1	BHC0335	03/12/24	03/18/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

FL01-F@4'
2402534-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0009	03/01/24	03/02/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0388	97.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0378	94.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0381	95.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0048	03/04/24	03/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.19	57.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

FL01-F@4'
2402534-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0036	03/04/24	03/06/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0344	103 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0244	73.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0413	03/14/24	03/18/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/29/24 12:53**

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

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

FL01-F@4'
2402534-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.51	0.200	mg/kg dry	1	BHC0261	03/10/24	03/15/24	EPA 6020B
Barium	86.4	0.400	"	"	"	"	"	"
Cadmium	0.277	0.200	"	"	"	"	"	"
Copper	6.41	0.400	"	"	"	"	"	"
Lead	9.74	0.200	"	"	"	"	"	"
Nickel	5.03	0.400	"	"	"	"	"	"
Silver	0.0503	0.0200	"	"	"	"	"	"
Zinc	24.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0528	03/15/24	03/18/24	EPA 7196A	

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

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.3	0.0500	mg/L dry	1	BHC0333	03/12/24	03/20/24	EPA 6020B	
Magnesium	10.2	0.0500	"	"	"	"	"	"	
Sodium	56.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.25	0.00100	units	1	BHC0820	03/21/24	03/21/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/29/24 12:53**

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

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

FL01-F@4'
2402534-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.5	%	1	BHC0316	03/12/24	03/13/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.563	0.0100	mmhos/cm	1	BHC0334	03/12/24	03/18/24	EPA 120.1	

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

Date Sampled: **02/29/24 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.22		pH Units	1	BHC0335	03/12/24	03/18/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHC0009 - EPA 5030 Soil MS

Blank (BHC0009-BLK1)

Prepared: 03/01/24 Analyzed: 03/02/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0374		"	0.0400		93.4	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.4	50-150			

LCS (BHC0009-BS1)

Prepared: 03/01/24 Analyzed: 03/02/24

Benzene	0.0915	0.0020	mg/kg	0.100		91.5	70-130			
Toluene	0.100	0.0050	"	0.100		100	70-130			
Ethylbenzene	0.0979	0.0050	"	0.100		97.9	70-130			
m,p-Xylene	0.201	0.010	"	0.200		101	70-130			
o-Xylene	0.101	0.0050	"	0.100		101	70-130			
1,2,4-Trimethylbenzene	0.0931	0.0050	"	0.100		93.1	70-130			
1,3,5-Trimethylbenzene	0.0921	0.0050	"	0.100		92.1	70-130			
Naphthalene	0.0958	0.0038	"	0.100		95.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0368		"	0.0400		92.1	50-150			
Surrogate: Toluene-d8	0.0372		"	0.0400		93.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.3	50-150			

Matrix Spike (BHC0009-MS1)

Source: 2402506-01

Prepared: 03/01/24 Analyzed: 03/02/24

Benzene	0.0836	0.0020	mg/kg	0.100	ND	83.6	70-130			
Toluene	0.0980	0.0050	"	0.100	ND	98.0	70-130			
Ethylbenzene	0.0886	0.0050	"	0.100	ND	88.6	70-130			
m,p-Xylene	0.173	0.010	"	0.200	0.00423	84.6	70-130			
o-Xylene	0.0890	0.0050	"	0.100	ND	89.0	70-130			
1,2,4-Trimethylbenzene	0.0834	0.0050	"	0.100	0.00600	77.4	70-130			
1,3,5-Trimethylbenzene	0.0802	0.0050	"	0.100	ND	80.2	70-130			
Naphthalene	0.0850	0.0038	"	0.100	0.0107	74.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		97.1	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.3	50-150			

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

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

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

Batch BHC0009 - EPA 5030 Soil MS

Matrix Spike Dup (BHC0009-MSD1)	Source: 2402506-01			Prepared: 03/01/24 Analyzed: 03/02/24						
Benzene	0.0992	0.0020	mg/kg	0.100	ND	99.2	70-130	17.0	30	
Toluene	0.112	0.0050	"	0.100	ND	112	70-130	13.2	30	
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	16.3	30	
m,p-Xylene	0.208	0.010	"	0.200	0.00423	102	70-130	18.1	30	
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130	15.0	30	
1,2,4-Trimethylbenzene	0.0954	0.0050	"	0.100	0.00600	89.4	70-130	13.5	30	
1,3,5-Trimethylbenzene	0.0927	0.0050	"	0.100	ND	92.7	70-130	14.4	30	
Naphthalene	0.0993	0.0038	"	0.100	0.0107	88.6	70-130	15.5	30	
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.3	50-150			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		93.9	50-150			

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHC0048 - EPA 3550A

Blank (BHC0048-BLK1)

Prepared & Analyzed: 03/04/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.8		"	12.5		94.7	30-150			

LCS (BHC0048-BS1)

Prepared & Analyzed: 03/04/24

C10-C28 (DRO)	403	50	mg/kg	500		80.7	70-130			
Surrogate: o-Terphenyl	10.1		"	12.5		80.4	30-150			

Matrix Spike (BHC0048-MS1)

Source: 2402525-01

Prepared & Analyzed: 03/04/24

C10-C28 (DRO)	397	50	mg/kg	500	45.3	70.4	70-130			
Surrogate: o-Terphenyl	7.41		"	12.5		59.3	30-150			

Matrix Spike Dup (BHC0048-MSD1)

Source: 2402525-01

Prepared & Analyzed: 03/04/24

C10-C28 (DRO)	423	50	mg/kg	500	45.3	75.6	70-130	6.44	20	
Surrogate: o-Terphenyl	7.17		"	12.5		57.3	30-150			

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHC0036 - EPA 5030 Soil MS

Blank (BHC0036-BLK1)

Prepared: 03/04/24 Analyzed: 03/06/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0376		"	0.0333		113	40-150			
Surrogate: Fluoranthene-d10	0.0389		"	0.0333		117	40-150			

LCS (BHC0036-BS1)

Prepared: 03/04/24 Analyzed: 03/06/24

Acenaphthene	0.0390	0.00500	mg/kg	0.0333		117	31-137			
Anthracene	0.0339	0.00500	"	0.0333		102	30-120			
Benzo (a) anthracene	0.0316	0.00500	"	0.0333		94.9	30-120			
Benzo (a) pyrene	0.0342	0.00500	"	0.0333		102	30-120			
Benzo (b) fluoranthene	0.0351	0.00500	"	0.0333		105	30-120			
Benzo (k) fluoranthene	0.0392	0.00500	"	0.0333		117	30-120			
Chrysene	0.0385	0.00500	"	0.0333		116	30-120			
Dibenz (a,h) anthracene	0.0283	0.00500	"	0.0333		84.9	30-120			
Fluoranthene	0.0377	0.00500	"	0.0333		113	30-120			
Fluorene	0.0389	0.00500	"	0.0333		117	30-120			
Indeno (1,2,3-cd) pyrene	0.0329	0.00500	"	0.0333		98.7	30-120			
Pyrene	0.0398	0.00500	"	0.0333		119	35-142			
1-Methylnaphthalene	0.0400	0.00500	"	0.0333		120	35-142			
2-Methylnaphthalene	0.0214	0.00500	"	0.0333		64.1	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0318		"	0.0333		95.4	40-150			
Surrogate: Fluoranthene-d10	0.0385		"	0.0333		116	40-150			

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Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BHC0036 - EPA 5030 Soil MS

Matrix Spike (BHC0036-MS1)

Source: 2402504-03

Prepared: 03/04/24 Analyzed: 03/06/24

Acenaphthene	0.0173	0.00500	mg/kg	0.0333	ND	51.9	31-137		
Anthracene	0.0136	0.00500	"	0.0333	ND	40.8	30-120		
Benzo (a) anthracene	0.0144	0.00500	"	0.0333	ND	43.1	30-120		
Benzo (a) pyrene	0.0138	0.00500	"	0.0333	ND	41.5	30-120		
Benzo (b) fluoranthene	0.0143	0.00500	"	0.0333	ND	42.8	30-120		
Benzo (k) fluoranthene	0.0188	0.00500	"	0.0333	ND	56.4	30-120		
Chrysene	0.0187	0.00500	"	0.0333	ND	56.1	30-120		
Dibenz (a,h) anthracene	0.0149	0.00500	"	0.0333	ND	44.6	30-120		
Fluoranthene	0.0175	0.00500	"	0.0333	ND	52.6	30-120		
Fluorene	0.0169	0.00500	"	0.0333	ND	50.7	30-120		
Indeno (1,2,3-cd) pyrene	0.0175	0.00500	"	0.0333	ND	52.5	30-120		
Pyrene	0.0193	0.00500	"	0.0333	ND	58.0	35-142		
1-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.5	15-130		
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0202		"	0.0333		60.5	40-150		
Surrogate: Fluoranthene-d10	0.0173		"	0.0333		51.8	40-150		

Matrix Spike Dup (BHC0036-MSD1)

Source: 2402504-03

Prepared: 03/04/24 Analyzed: 03/06/24

Acenaphthene	0.0204	0.00500	mg/kg	0.0333	ND	61.1	31-137	16.3	30
Anthracene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	11.7	30
Benzo (a) anthracene	0.0162	0.00500	"	0.0333	ND	48.7	30-120	12.2	30
Benzo (a) pyrene	0.0156	0.00500	"	0.0333	ND	46.8	30-120	12.0	30
Benzo (b) fluoranthene	0.0171	0.00500	"	0.0333	ND	51.3	30-120	17.9	30
Benzo (k) fluoranthene	0.0208	0.00500	"	0.0333	ND	62.5	30-120	10.1	30
Chrysene	0.0204	0.00500	"	0.0333	ND	61.1	30-120	8.58	30
Dibenz (a,h) anthracene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	9.82	30
Fluoranthene	0.0191	0.00500	"	0.0333	ND	57.3	30-120	8.50	30
Fluorene	0.0204	0.00500	"	0.0333	ND	61.3	30-120	18.9	30
Indeno (1,2,3-cd) pyrene	0.0145	0.00500	"	0.0333	ND	43.4	30-120	18.9	30
Pyrene	0.0217	0.00500	"	0.0333	ND	65.0	35-142	11.3	30
1-Methylnaphthalene	0.0176	0.00500	"	0.0333	ND	52.8	15-130	6.72	50
2-Methylnaphthalene	0.0202	0.00500	"	0.0333	ND	60.7	15-130	18.7	50
Surrogate: 2-Methylnaphthalene-d10	0.0224		"	0.0333		67.1	40-150		
Surrogate: Fluoranthene-d10	0.0193		"	0.0333		58.0	40-150		

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

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

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

Batch BHC0413 - EPA 3050B

Blank (BHC0413-BLK1)

Prepared: 03/14/24 Analyzed: 03/18/24

Boron ND 2.00 mg/L

LCS (BHC0413-BS1)

Prepared: 03/14/24 Analyzed: 03/18/24

Boron 5.23 2.00 mg/L 5.00 105 80-120

Duplicate (BHC0413-DUP1)

Source: 2402531-06

Prepared: 03/14/24 Analyzed: 03/18/24

Boron 0.135 2.00 mg/L 0.165 20.3 20 QR-01

Matrix Spike (BHC0413-MS1)

Source: 2402531-06

Prepared: 03/14/24 Analyzed: 03/18/24

Boron 5.11 2.00 mg/L 5.00 0.165 99.0 75-125

Matrix Spike Dup (BHC0413-MSD1)

Source: 2402531-06

Prepared: 03/14/24 Analyzed: 03/18/24

Boron 5.34 2.00 mg/L 5.00 0.165 104 75-125 4.41 25

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHC0261 - EPA 3050B

Blank (BHC0261-BLK1)

Prepared: 03/10/24 Analyzed: 03/15/24

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"
Selenium	ND	0.260	"

LCS (BHC0261-BS1)

Prepared: 03/10/24 Analyzed: 03/15/24

Arsenic	41.2	0.200	mg/kg wet	40.0	103	80-120
Barium	42.5	0.400	"	40.0	106	80-120
Cadmium	2.12	0.200	"	2.00	106	80-120
Copper	46.5	0.400	"	40.0	116	80-120
Lead	21.6	0.200	"	20.0	108	80-120
Nickel	45.6	0.400	"	40.0	114	80-120
Silver	2.13	0.0200	"	2.00	106	80-120
Zinc	46.0	0.400	"	40.0	115	80-120
Selenium	3.96	0.260	"	4.00	98.9	80-120

Duplicate (BHC0261-DUP1)

Source: 2402534-01

Prepared: 03/10/24 Analyzed: 03/15/24

Arsenic	3.48	0.200	mg/kg dry	3.17	9.48	20
Barium	98.1	0.400	"	92.7	5.67	20
Cadmium	0.570	0.200	"	0.280	68.4	20
Copper	6.76	0.400	"	6.53	3.48	20
Lead	10.7	0.200	"	9.84	8.19	20
Nickel	5.34	0.400	"	5.10	4.62	20
Silver	0.0471	0.0200	"	0.0438	7.25	20
Zinc	24.8	0.400	"	21.7	13.3	20
Selenium	ND	0.260	"	ND		20

QR-04

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Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHC0261 - EPA 3050B

Matrix Spike (BHC0261-MS1)

Source: 2402534-01

Prepared: 03/10/24 Analyzed: 03/15/24

Arsenic	52.6	0.200	mg/kg dry	47.1	3.17	105	75-125			
Barium	155	0.400	"	47.1	92.7	132	75-125			QM-07
Cadmium	2.78	0.200	"	2.36	0.280	106	75-125			
Copper	31.0	0.400	"	47.1	6.53	51.9	75-125			QM-07
Lead	34.8	0.200	"	23.6	9.84	106	75-125			
Nickel	29.7	0.400	"	47.1	5.10	52.2	75-125			QM-07
Silver	2.51	0.0200	"	2.36	0.0438	105	75-125			
Zinc	47.0	0.400	"	47.1	21.7	53.6	75-125			QM-07
Selenium	4.24	0.260	"	4.71	ND	90.0	75-125			

Matrix Spike Dup (BHC0261-MSD1)

Source: 2402534-01

Prepared: 03/10/24 Analyzed: 03/15/24

Arsenic	52.4	0.200	mg/kg dry	47.1	3.17	104	75-125	0.420	25	
Barium	153	0.400	"	47.1	92.7	129	75-125	1.01	25	QM-07
Cadmium	2.77	0.200	"	2.36	0.280	106	75-125	0.510	25	
Copper	30.6	0.400	"	47.1	6.53	51.0	75-125	1.35	25	QM-07
Lead	34.4	0.200	"	23.6	9.84	104	75-125	1.00	25	
Nickel	29.4	0.400	"	47.1	5.10	51.6	75-125	0.969	25	QM-07
Silver	2.48	0.0200	"	2.36	0.0438	103	75-125	1.42	25	
Zinc	46.6	0.400	"	47.1	21.7	52.8	75-125	0.829	25	QM-07
Selenium	4.46	0.260	"	4.71	ND	94.6	75-125	5.03	25	

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHC0528 - 3060A Mod

Blank (BHC0528-BLK1)

Prepared: 03/15/24 Analyzed: 03/18/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHC0528-BS1)

Prepared: 03/15/24 Analyzed: 03/18/24

Chromium, Hexavalent 24.0 0.30 mg/kg wet 25.0 96.0 80-120

Duplicate (BHC0528-DUP1)

Source: 2402530-01

Prepared: 03/15/24 Analyzed: 03/18/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHC0528-MS1)

Source: 2402530-01

Prepared: 03/15/24 Analyzed: 03/18/24

Chromium, Hexavalent 26.8 0.30 mg/kg dry 26.6 ND 101 75-125

Matrix Spike Dup (BHC0528-MSD1)

Source: 2402530-01

Prepared: 03/15/24 Analyzed: 03/18/24

Chromium, Hexavalent 26.8 0.30 mg/kg dry 26.6 ND 101 75-125 0.00 20

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

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

Summit Scientific

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

Batch BHC0333 - General Preparation

Blank (BHC0333-BLK1)

Prepared: 03/12/24 Analyzed: 03/20/24

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

LCS (BHC0333-BS1)

Prepared: 03/12/24 Analyzed: 03/20/24

Calcium	6.39	0.0500	mg/L wet	5.00	128	70-130
Magnesium	5.65	0.0500	"	5.00	113	70-130
Sodium	5.76	0.0500	"	5.00	115	70-130

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Project: Noble - Watkins 13-05

Project Number: UWRWE-A3530-ABN

Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

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

Summit Scientific

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

Batch BHC0316 - General Preparation

Duplicate (BHC0316-DUP1)		Source: 2402506-01			Prepared: 03/12/24 Analyzed: 03/13/24					
% Solids	91.3		%		92.5		1.33		20	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

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

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

Batch BHC0334 - General Preparation

Blank (BHC0334-BLK1)

Prepared: 03/12/24 Analyzed: 03/18/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHC0334-BS1)

Prepared: 03/12/24 Analyzed: 03/18/24

Specific Conductance (EC) 0.158 0.0100 mmhos/cm 0.150 105 95-105

Duplicate (BHC0334-DUP1)

Source: 2402506-01

Prepared: 03/12/24 Analyzed: 03/18/24

Specific Conductance (EC) 0.0810 0.0100 mmhos/cm 0.0800 1.27 20

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

Project: Noble - Watkins 13-05

Project Number: UWRWE-A3530-ABN

Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

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

Summit Scientific

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

Batch BHC0335 - General Preparation

LCS (BHC0335-BS1)

Prepared: 03/12/24 Analyzed: 03/18/24

pH	9.06	pH Units	9.18	98.7	95-105
----	------	----------	------	------	--------

Duplicate (BHC0335-DUP1)

Source: 2402506-01

Prepared: 03/12/24 Analyzed: 03/18/24

pH	9.03	pH Units	9.02	0.111	20
----	------	----------	------	-------	----

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Project: Noble - Watkins 13-05

Project Number: UWRWE-A3530-ABN

Project Manager: Jacob Whritenour

Reported:
03/21/24 14:53

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 25, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

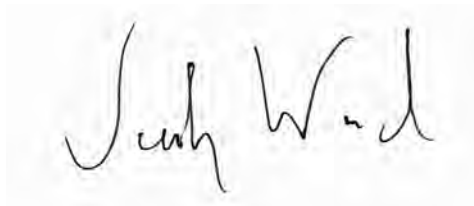
Broomfield, CO 80020

RE: Noble - Watkins 13-05

Work Order #2402457

Enclosed are the results of analyses for samples received by Summit Scientific on 02/26/24 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jacob Wood", is displayed within a light gray rectangular box.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-C@2'	2402457-01	Soil	02/26/24 12:41	02/26/24 17:30
BKG01@2'	2402457-02	Soil	02/26/24 13:20	02/26/24 17:30

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				Send Data To:				Send Invoice To:													
Client: Noble/Tasman				Project Manager: Jake Whritenour				Company:													
Address: 6855 W. 119th Ave.				E-Mail: Jwhritenour@tasman-geo.com				Project Name/Location:													
City/State/Zip: Broomfield/CO/ 80020								AFE#: ULRWE-A3530-ABN													
Phone: 517-231-8618				Project Name: Watkins 13-05				PO/Billing Codes:													
Sampler Name: Hunter Sewell				Project Number:				Contact: Don Peterson #5 Miguel Barron													
				Preservative		Matrix		Analysis Requested				Special Instructions									
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN	1,2,4 & 1,3,5-TMBs	TDS, Cl, SO4	TPH (cc-cs)	Boron	pH, EC, SAR	PAHs	Metals	
1	FL01-C @ 2'	2-26-24	1241	3			X			X			X	X		X	X	X	X	X	
2	BK601 @ 2'	↓	1320	↓			↓			↓										X	
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	TAT Business Days	Field DO	Notes:
<i>[Signature]</i>	2-26-24 1630	<i>[Signature]</i>	2-26-24 1630	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
<i>Tasman (check)</i>	2-26-24 1700	<i>[Signature]</i>	2-26-24 1730	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 1.0		Corrected Temperature: 6		IR gun #:	HNO3 lot #:	

S2

Sample Receipt Checklist

S2 Work Order# 2402457Client: Nobel Gasman Client Project ID: Watkins 13-05Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 9.0Thermometer # 1

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

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.AS
Custodian Printed Name2/26/24
Date/Time



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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

FL01-C@2'
2402457-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHB0845	02/27/24	02/28/24	EPA 8260B	
Toluene	0.021	0.0050		"	"	"	"	"	"	
Ethylbenzene	0.0058	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.087	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.031	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.015	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.61	0.50		"	"	"	"	"	"	

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0346	86.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHB0844	02/27/24	02/29/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/26/24 12:41**

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

PAH by EPA Method 8270D SIM

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

FL01-C@2'
2402457-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHB0880	02/28/24	02/29/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0475	0.00500	"	"	"	"	"	"	

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0175	52.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0150	44.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0321	03/12/24	03/14/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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03/25/24 14:12

FL01-C@2'
2402457-01 (Soil)

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Total Metals by EPA 6020B

Arsenic	3.49	0.200	mg/kg dry	1	BHC0247	03/09/24	03/12/24	EPA 6020B
Barium	95.7	0.400	"	"	"	"	"	"
Cadmium	0.237	0.200	"	"	"	"	"	"
Copper	6.29	0.400	"	"	"	"	"	"
Lead	10.3	0.200	"	"	"	"	"	"
Nickel	5.41	0.400	"	"	"	"	"	"
Silver	0.0443	0.0200	"	"	"	"	"	"
Zinc	24.1	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0466	03/15/24	03/16/24	EPA 7196A	

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

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	35.2	0.0500	mg/L dry	1	BHC0204	03/07/24	03/15/24	EPA 6020B	
Magnesium	9.04	0.0500	"	"	"	"	"	"	
Sodium	131	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.10	0.00100	units	1	BHC0633	03/18/24	03/18/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/26/24 12:41**

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

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Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

FL01-C@2'
2402457-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.6	%	1	BHC0262	03/11/24	03/11/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.924	0.0100	mmhos/cm	1	BHC0205	03/07/24	03/09/24	EPA 120.1	

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

Date Sampled: **02/26/24 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BHC0206	03/07/24	03/09/24	EPA 9045D	

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Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

BKG01@2'
2402457-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/26/24 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.20	0.200	mg/kg dry	1	BHC0247	03/09/24	03/12/24	EPA 6020B	
Barium	69.8	0.400	"	"	"	"	"	"	
Cadmium	0.243	0.200	"	"	"	"	"	"	
Copper	7.24	0.400	"	"	"	"	"	"	
Lead	8.24	0.200	"	"	"	"	"	"	
Nickel	4.37	0.400	"	"	"	"	"	"	
Silver	0.0333	0.0200	"	"	"	"	"	"	
Zinc	33.6	0.400	"	"	"	"	"	"	
Selenium	0.269	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/26/24 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0466	03/15/24	03/16/24	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/26/24 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	85.2		%	1	BHC0262	03/11/24	03/11/24	Calculation	

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHB0845 - EPA 5030 Soil MS

Blank (BHB0845-BLK1)

Prepared: 02/27/24 Analyzed: 02/28/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0310		"	0.0400		77.4	50-150			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0366		"	0.0400		91.4	50-150			

LCS (BHB0845-BS1)

Prepared: 02/27/24 Analyzed: 02/28/24

Benzene	0.103	0.0020	mg/kg	0.100		103	70-130			
Toluene	0.118	0.0050	"	0.100		118	70-130			
Ethylbenzene	0.120	0.0050	"	0.100		120	70-130			
m,p-Xylene	0.241	0.010	"	0.200		120	70-130			
o-Xylene	0.121	0.0050	"	0.100		121	70-130			
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100		110	70-130			
1,3,5-Trimethylbenzene	0.111	0.0050	"	0.100		111	70-130			
Naphthalene	0.110	0.0038	"	0.100		110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0315		"	0.0400		78.7	50-150			
Surrogate: Toluene-d8	0.0370		"	0.0400		92.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	50-150			

Matrix Spike (BHB0845-MS1)

Source: 2402455-01

Prepared: 02/27/24 Analyzed: 02/28/24

Benzene	0.0296	0.0020	mg/kg	0.100	ND	29.6	70-130			QM-05
Toluene	0.0360	0.0050	"	0.100	ND	36.0	70-130			QM-05
Ethylbenzene	0.0473	0.0050	"	0.100	ND	47.3	70-130			QM-05
m,p-Xylene	0.0815	0.010	"	0.200	ND	40.8	70-130			QM-05
o-Xylene	0.0450	0.0050	"	0.100	ND	45.0	70-130			QM-05
1,2,4-Trimethylbenzene	0.0215	0.0050	"	0.100	ND	21.5	70-130			QM-05
1,3,5-Trimethylbenzene	0.0476	0.0050	"	0.100	ND	47.6	70-130			QM-05
Naphthalene	0.00735	0.0038	"	0.100	ND	7.35	70-130			QM-05
Surrogate: 1,2-Dichloroethane-d4	0.0340		"	0.0400		84.9	50-150			
Surrogate: Toluene-d8	0.0385		"	0.0400		96.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400		92.9	50-150			

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

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

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

Batch BHB0845 - EPA 5030 Soil MS

Matrix Spike Dup (BHB0845-MSD1)		Source: 2402455-01			Prepared: 02/27/24 Analyzed: 02/28/24					
Benzene	0.0284	0.0020	mg/kg	0.100	ND	28.4	70-130	4.04	30	QM-05
Toluene	0.0346	0.0050	"	0.100	ND	34.6	70-130	4.08	30	QM-05
Ethylbenzene	0.0425	0.0050	"	0.100	ND	42.5	70-130	10.8	30	QM-05
m,p-Xylene	0.0742	0.010	"	0.200	ND	37.1	70-130	9.36	30	QM-05
o-Xylene	0.0443	0.0050	"	0.100	ND	44.3	70-130	1.68	30	QM-05
1,2,4-Trimethylbenzene	0.0178	0.0050	"	0.100	ND	17.8	70-130	18.9	30	QM-05
1,3,5-Trimethylbenzene	0.0410	0.0050	"	0.100	ND	41.0	70-130	14.9	30	QM-05
Naphthalene	ND	0.0038	"	0.100	ND		70-130	200	30	QM-05
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0349		"	0.0400		87.2	50-150			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	50-150			

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHB0844 - EPA 3550A

Blank (BHB0844-BLK1)

Prepared: 02/27/24 Analyzed: 02/29/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	8.83		"	12.5		70.6	30-150			

LCS (BHB0844-BS1)

Prepared: 02/27/24 Analyzed: 02/29/24

C10-C28 (DRO)	643	50	mg/kg	500		129	70-130			
Surrogate: o-Terphenyl	17.2		"	12.5		138	30-150			

Matrix Spike (BHB0844-MS1)

Source: 2402455-01

Prepared: 02/27/24 Analyzed: 02/29/24

C10-C28 (DRO)	605	50	mg/kg	500	28.8	115	70-130			
Surrogate: o-Terphenyl	11.2		"	12.5		89.6	30-150			

Matrix Spike Dup (BHB0844-MSD1)

Source: 2402455-01

Prepared: 02/27/24 Analyzed: 02/29/24

C10-C28 (DRO)	529	50	mg/kg	500	28.8	100	70-130	13.3	20	
Surrogate: o-Terphenyl	13.2		"	12.5		105	30-150			

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHB0880 - EPA 5030 Soil MS

Blank (BHB0880-BLK1)

Prepared: 02/28/24 Analyzed: 02/29/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0407		"	0.0333		122	40-150			
Surrogate: Fluoranthene-d10	0.0324		"	0.0333		97.1	40-150			

LCS (BHB0880-BS1)

Prepared: 02/28/24 Analyzed: 02/29/24

Acenaphthene	0.0389	0.00500	mg/kg	0.0333		117	31-137			
Anthracene	0.0352	0.00500	"	0.0333		106	30-120			
Benzo (a) anthracene	0.0380	0.00500	"	0.0333		114	30-120			
Benzo (a) pyrene	0.0357	0.00500	"	0.0333		107	30-120			
Benzo (b) fluoranthene	0.0381	0.00500	"	0.0333		114	30-120			
Benzo (k) fluoranthene	0.0377	0.00500	"	0.0333		113	30-120			
Chrysene	0.0348	0.00500	"	0.0333		104	30-120			
Dibenz (a,h) anthracene	0.0229	0.00500	"	0.0333		68.8	30-120			
Fluoranthene	0.0396	0.00500	"	0.0333		119	30-120			
Fluorene	0.0401	0.00500	"	0.0333		120	30-120			
Indeno (1,2,3-cd) pyrene	0.0225	0.00500	"	0.0333		67.4	30-120			
Pyrene	0.0368	0.00500	"	0.0333		110	35-142			
1-Methylnaphthalene	0.0323	0.00500	"	0.0333		96.8	35-142			
2-Methylnaphthalene	0.0401	0.00500	"	0.0333		120	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0205		"	0.0333		61.5	40-150			
Surrogate: Fluoranthene-d10	0.0282		"	0.0333		84.6	40-150			

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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHB0880 - EPA 5030 Soil MS

Matrix Spike (BHB0880-MS1)

Source: 2402440-01

Prepared: 02/28/24 Analyzed: 02/29/24

Acenaphthene	0.0256	0.00500	mg/kg	0.0333	ND	76.8	31-137				
Anthracene	0.0288	0.00500	"	0.0333	ND	86.3	30-120				
Benzo (a) anthracene	0.0277	0.00500	"	0.0333	ND	83.2	30-120				
Benzo (a) pyrene	0.0256	0.00500	"	0.0333	ND	76.9	30-120				
Benzo (b) fluoranthene	0.0239	0.00500	"	0.0333	ND	71.8	30-120				
Benzo (k) fluoranthene	0.0259	0.00500	"	0.0333	ND	77.7	30-120				
Chrysene	0.0277	0.00500	"	0.0333	ND	83.2	30-120				
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333	ND	59.0	30-120				
Fluoranthene	0.0277	0.00500	"	0.0333	ND	83.1	30-120				
Fluorene	0.0264	0.00500	"	0.0333	ND	79.1	30-120				
Indeno (1,2,3-cd) pyrene	0.0187	0.00500	"	0.0333	ND	56.2	30-120				
Pyrene	0.0315	0.00500	"	0.0333	ND	94.4	35-142				
1-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.2	15-130				
2-Methylnaphthalene	0.0342	0.00500	"	0.0333	ND	103	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0172		"	0.0333		51.6	40-150				
Surrogate: Fluoranthene-d10	0.0201		"	0.0333		60.3	40-150				

Matrix Spike Dup (BHB0880-MSD1)

Source: 2402440-01

Prepared: 02/28/24 Analyzed: 02/29/24

Acenaphthene	0.0291	0.00500	mg/kg	0.0333	ND	87.4	31-137	12.9	30		
Anthracene	0.0317	0.00500	"	0.0333	ND	95.2	30-120	9.80	30		
Benzo (a) anthracene	0.0318	0.00500	"	0.0333	ND	95.3	30-120	13.6	30		
Benzo (a) pyrene	0.0291	0.00500	"	0.0333	ND	87.2	30-120	12.6	30		
Benzo (b) fluoranthene	0.0278	0.00500	"	0.0333	ND	83.5	30-120	15.1	30		
Benzo (k) fluoranthene	0.0289	0.00500	"	0.0333	ND	86.8	30-120	11.0	30		
Chrysene	0.0307	0.00500	"	0.0333	ND	92.2	30-120	10.2	30		
Dibenz (a,h) anthracene	0.0226	0.00500	"	0.0333	ND	67.9	30-120	14.1	30		
Fluoranthene	0.0294	0.00500	"	0.0333	ND	88.1	30-120	5.88	30		
Fluorene	0.0298	0.00500	"	0.0333	ND	89.3	30-120	12.2	30		
Indeno (1,2,3-cd) pyrene	0.0214	0.00500	"	0.0333	ND	64.1	30-120	13.2	30		
Pyrene	0.0351	0.00500	"	0.0333	ND	105	35-142	11.0	30		
1-Methylnaphthalene	0.0222	0.00500	"	0.0333	ND	66.6	15-130	5.23	50		
2-Methylnaphthalene	0.0302	0.00500	"	0.0333	ND	90.6	15-130	12.6	50		
Surrogate: 2-Methylnaphthalene-d10	0.0173		"	0.0333		52.0	40-150				
Surrogate: Fluoranthene-d10	0.0214		"	0.0333		64.3	40-150				

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

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

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

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

Batch BHC0321 - EPA 3050B

Blank (BHC0321-BLK1)

Prepared: 03/12/24 Analyzed: 03/14/24

Boron ND 2.00 mg/L

LCS (BHC0321-BS1)

Prepared: 03/12/24 Analyzed: 03/14/24

Boron 6.23 2.00 mg/L 5.00 125 80-120 QLCS-01

Duplicate (BHC0321-DUP1)

Source: 2402457-01

Prepared: 03/12/24 Analyzed: 03/14/24

Boron 1.10 2.00 mg/L 0.811 30.5 20 QR-01

Matrix Spike (BHC0321-MS1)

Source: 2402457-01

Prepared: 03/12/24 Analyzed: 03/14/24

Boron 7.64 2.00 mg/L 5.00 0.811 136 75-125 QLCS-01

Matrix Spike Dup (BHC0321-MSD1)

Source: 2402457-01

Prepared: 03/12/24 Analyzed: 03/14/24

Boron 6.80 2.00 mg/L 5.00 0.811 120 75-125 11.6 25

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6855 W. 119th Ave.
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Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHC0247 - EPA 3050B

Blank (BHC0247-BLK1)

Prepared: 03/09/24 Analyzed: 03/12/24

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"
Selenium	ND	0.260	"

LCS (BHC0247-BS1)

Prepared: 03/09/24 Analyzed: 03/12/24

Arsenic	39.0	0.200	mg/kg wet	40.0	97.5	80-120
Barium	40.8	0.400	"	40.0	102	80-120
Cadmium	2.04	0.200	"	2.00	102	80-120
Copper	44.3	0.400	"	40.0	111	80-120
Lead	20.3	0.200	"	20.0	102	80-120
Nickel	43.8	0.400	"	40.0	110	80-120
Silver	2.02	0.0200	"	2.00	101	80-120
Zinc	42.7	0.400	"	40.0	107	80-120
Selenium	4.61	0.260	"	4.00	115	80-120

Duplicate (BHC0247-DUP1)

Source: 2401367-04RE1

Prepared: 03/09/24 Analyzed: 03/12/24

Arsenic	5.79	0.200	mg/kg wet	5.42	6.65	20	
Barium	73.4	0.400	"	64.4	13.0	20	
Cadmium	0.450	0.200	"	0.441	2.15	20	
Copper	7.22	0.400	"	6.97	3.51	20	
Lead	10.6	0.200	"	9.84	6.99	20	
Nickel	7.14	0.400	"	8.91	22.0	20	QR-04
Silver	0.0348	0.0200	"	0.0320	8.38	20	
Zinc	25.2	0.400	"	26.5	5.05	20	
Selenium	0.735	0.260	"	0.594	21.2	20	QR-04

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Broomfield CO, 80020

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHC0247 - EPA 3050B

Matrix Spike (BHC0247-MS1)

Source: 2401367-04RE1 Prepared: 03/09/24 Analyzed: 03/12/24

Arsenic	44.7	0.200	mg/kg wet	40.0	5.42	98.2	75-125			
Barium	97.6	0.400	"	40.0	64.4	82.8	75-125			
Cadmium	2.57	0.200	"	2.00	0.441	107	75-125			
Copper	29.8	0.400	"	40.0	6.97	57.2	75-125			QM-05
Lead	29.5	0.200	"	20.0	9.84	98.5	75-125			
Nickel	31.4	0.400	"	40.0	8.91	56.2	75-125			QM-05
Silver	2.09	0.0200	"	2.00	0.0320	103	75-125			
Zinc	46.1	0.400	"	40.0	26.5	49.0	75-125			QM-05
Selenium	6.46	0.260	"	4.00	0.594	147	75-125			QM-05

Matrix Spike Dup (BHC0247-MSD1)

Source: 2401367-04RE1 Prepared: 03/09/24 Analyzed: 03/12/24

Arsenic	44.8	0.200	mg/kg wet	40.0	5.42	98.5	75-125	0.259	25	
Barium	96.8	0.400	"	40.0	64.4	81.0	75-125	0.752	25	
Cadmium	2.58	0.200	"	2.00	0.441	107	75-125	0.264	25	
Copper	30.6	0.400	"	40.0	6.97	59.1	75-125	2.52	25	QM-05
Lead	29.4	0.200	"	20.0	9.84	97.6	75-125	0.629	25	
Nickel	32.2	0.400	"	40.0	8.91	58.3	75-125	2.57	25	QM-05
Silver	2.09	0.0200	"	2.00	0.0320	103	75-125	0.440	25	
Zinc	47.2	0.400	"	40.0	26.5	51.7	75-125	2.31	25	QM-05
Selenium	6.86	0.260	"	4.00	0.594	157	75-125	5.96	25	QM-05

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Broomfield CO, 80020

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHC0466 - 3060A Mod

Blank (BHC0466-BLK1)

Prepared: 03/15/24 Analyzed: 03/16/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHC0466-BS1)

Prepared: 03/15/24 Analyzed: 03/16/24

Chromium, Hexavalent 21.0 0.30 mg/kg wet 25.0 84.2 80-120

Duplicate (BHC0466-DUP1)

Source: 2402445-01

Prepared: 03/15/24 Analyzed: 03/16/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHC0466-MS1)

Source: 2402445-01

Prepared: 03/15/24 Analyzed: 03/16/24

Chromium, Hexavalent 29.2 0.30 mg/kg dry 28.3 ND 103 75-125

Matrix Spike Dup (BHC0466-MSD1)

Source: 2402445-01

Prepared: 03/15/24 Analyzed: 03/16/24

Chromium, Hexavalent 29.2 0.30 mg/kg dry 28.3 ND 103 75-125 0.00 20

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

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

Summit Scientific

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

Batch BHC0204 - General Preparation

Blank (BHC0204-BLK1)

Prepared: 03/07/24 Analyzed: 03/15/24

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

LCS (BHC0204-BS1)

Prepared: 03/07/24 Analyzed: 03/15/24

Calcium	5.36	0.0500	mg/L wet	5.00	107	70-130
Magnesium	5.52	0.0500	"	5.00	110	70-130
Sodium	5.53	0.0500	"	5.00	111	70-130

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Project: Noble - Watkins 13-05

Project Number: UWRWE-A3530-ABN

Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

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

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

Batch BHC0262 - General Preparation

Duplicate (BHC0262-DUP1)		Source: 2402457-01		Prepared & Analyzed: 03/11/24						
% Solids	83.8		%		86.6			3.28	20	

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Broomfield CO, 80020

Project: Noble - Watkins 13-05
Project Number: UWRWE-A3530-ABN
Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

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

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

Batch BHC0205 - General Preparation

Blank (BHC0205-BLK1)

Prepared: 03/07/24 Analyzed: 03/09/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHC0205-BS1)

Prepared: 03/07/24 Analyzed: 03/09/24

Specific Conductance (EC) 0.147 0.0100 mmhos/cm 0.150 98.1 95-105

Duplicate (BHC0205-DUP1)

Source: 2402445-01

Prepared: 03/07/24 Analyzed: 03/09/24

Specific Conductance (EC) 0.350 0.0100 mmhos/cm 0.351 0.228 20

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Watkins 13-05

Project Number: UWRWE-A3530-ABN

Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

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

Summit Scientific

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

Batch BHC0206 - General Preparation

LCS (BHC0206-BS1)

Prepared: 03/07/24 Analyzed: 03/09/24

pH	9.07	pH Units	9.18	98.8	95-105
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Duplicate (BHC0206-DUP1)

Source: 2402445-01

Prepared: 03/07/24 Analyzed: 03/09/24

pH	8.09	pH Units	8.18	1.11	20
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Watkins 13-05

Project Number: UWRWE-A3530-ABN

Project Manager: Jacob Whritenour

Reported:
03/25/24 14:12

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
QLCS-01	The spike recovery was outside acceptance limits for this analyte indicating a potential high bias. The corresponding samples did not exhibit concentrations above reporting level for this analyte. Data quality is not affected.
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