

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - ALEXANDER FEDERAL H4-2JI

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
AST01@0.5'	10/18/23	0.5	No Staining	No Odor	Lab	40.25792413	-104.6679487	0.8
AST02@0.5'	10/18/23	0.8	No Staining	No Odor	Lab	40.25793071	-104.6678846	0.9
FS01@4'	10/18/23	2.6	No Staining	No Odor	Lab	40.25789140	-104.6679520	1.4
FS02@4'	10/18/23	4.7	No Staining	No Odor	Lab	40.25788485	-104.6679069	1.2
MH01@0.5'	10/18/23	1,845	No Staining	HC Odor	Grab	40.25815966	-104.6680258	0.8
MH02@0.5'	10/18/23	0.5	No Staining	No Odor	Grab	40.25819095	-104.6680244	NC
SEP01-DL@3'	10/18/23	2.0	No Staining	No Odor	Lab	40.25815796	-104.6679610	0.8
SEP01-FL@3'	10/18/23	2.8	No Staining	No Odor	Lab	40.25816917	-104.6678836	0.9
SEP02-DL@2'	10/18/23	2.7	No Staining	No Odor	Lab	40.25815683	-104.6678957	0.9
SS01@2.5'	10/18/23	1.6	No Staining	No Odor	Grab	40.25791302	-104.6679508	1.4
SS02@2.5'	10/18/23	2.9	No Staining	No Odor	Grab	40.25791297	-104.6678987	1.2
SS03@2.5'	10/18/23	2.5	No Staining	No Odor	Grab	40.25788841	-104.6678686	1.4
SS04@2.5'	10/18/23	3.0	No Staining	No Odor	Grab	40.25786360	-104.6679180	1.4
SS05@2.5'	10/18/23	3.1	No Staining	No Odor	Lab	40.25785422	-104.6679591	1.4
SS06@2.5'	10/18/23	8.2	No Staining	No Odor	Lab	40.25789090	-104.6679862	1.0
MH03@0.5'	10/19/23	1.9	No Staining	No Odor	Lab	40.25816354	-104.6680260	NC

Notes:

PID = Photoionization detector

ppm = parts per million

PDOP = Position dilution of precision

NC = Not Collected

HC = Hydrocarbon

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

**TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - ALEXANDER FEDERAL H4-2JI**

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 SSL²		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^{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
AST01@0.5'	10/18/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST02@0.5'	10/18/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@4'	10/18/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS02@4'	10/18/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-DL@3'	10/18/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-FL@3'	10/18/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	0.00715	0.00505	0.0106	0.0132	0.00604	0.0140	<0.00500	0.0392	<0.00500	0.00637	0.0385	<0.00500	<0.00500
SEP02-DL@2'	10/18/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS05@2.5'	10/18/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS06@2.5'	10/18/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
MH03@2.5'	10/19/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	0.0070	<0.0038	2.0	140	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00999	0.00781	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL²		6 - 8.3	<6	<4mmhos/cm	2
AST01@0.5'	10/18/23	8.02	0.213	0.189	<2.00
AST02@0.5'	10/18/23	7.90	0.0944	0.168	<2.00
FS01@4'	10/18/23	8.03	0.147	0.150	<2.00
FS02@4'	10/18/23	7.97	0.141	0.166	<2.00
SEP01-DL@3'	10/18/23	7.02	0.0426	0.0649	<2.00
SEP01-FL@3'	10/18/23	7.91	0.0998	0.156	<2.00
SEP02-DL@2'	10/18/23	7.15	0.0445	0.124	<2.00
SS05@2.5'	10/18/23	8.07	0.0314	0.154	<2.00
SS06@2.5'	10/18/23	8.17	0.116	0.147	<2.00
MH03@2.5'	10/19/23	6.90	0.0327	0.0706	<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 SSL²		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL^{2,3}		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
AST01@0.5'	10/18/23	1.07	46.4	<0.200	<0.30	2.34	3.78	1.81	<0.260	<0.0200	8.45
AST02@0.5'	10/18/23	1.35	61.9	0.220	<0.30	1.89	5.33	1.66	<0.260	<0.0200	7.30
FS01@4'	10/18/23	0.931	41.1	<0.200	<0.30	2.17	3.76	1.80	<0.260	<0.0200	7.73
FS02@4'	10/18/23	0.959	66.5	<0.200	<0.30	2.43	5.62	2.32	<0.260	0.0253	10.4
SEP01-DL@3'	10/18/23	1.09	63.6	<0.200	<0.30	2.60	4.60	2.58	<0.260	0.0233	11.1
SEP01-FL@3'	10/18/23	0.931	56.8	<0.200	<0.30	2.78	4.00	1.70	<0.260	0.0263	15.6
SEP02-DL@2'	10/18/23	1.14	66.3	<0.200	<0.30	2.71	4.75	2.68	<0.260	0.0245	11.1
SS05@2.5'	10/18/23	1.13	52.2	<0.200	<0.30	2.43	3.89	2.48	<0.260	<0.0200	9.67
SS06@2.5'	10/18/23	0.996	42.4	<0.200	<0.30	2.38	3.13	2.00	<0.260	<0.0200	8.39
MH03@2.5'	10/19/23	1.99	152	0.259	<0.30	4.74	7.41	5.13	<0.260	0.0478	16.2

Notes:

- Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- 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 = Millimhos per centimeter
 mg/L = Milligrams per liter
 < = Analytical result is less than the indicated laboratory reporting limit

1,2,4 - TMB = 1,2,4 Trimethylbenzene
 1,3,5 - TMB = 1,3,5 Trimethylbenzene
 Benz(a) = 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

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

Photographic Log



Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: Facing E ASTs and PBVs appear to be in good condition			

Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: Facing NE			

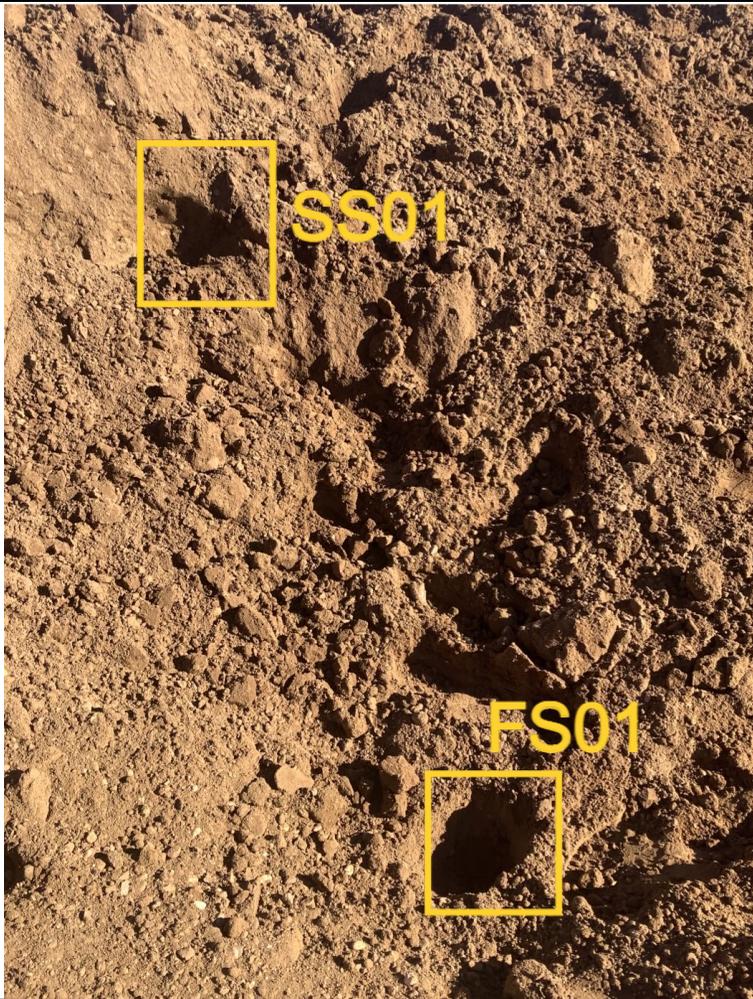
Photographic Log

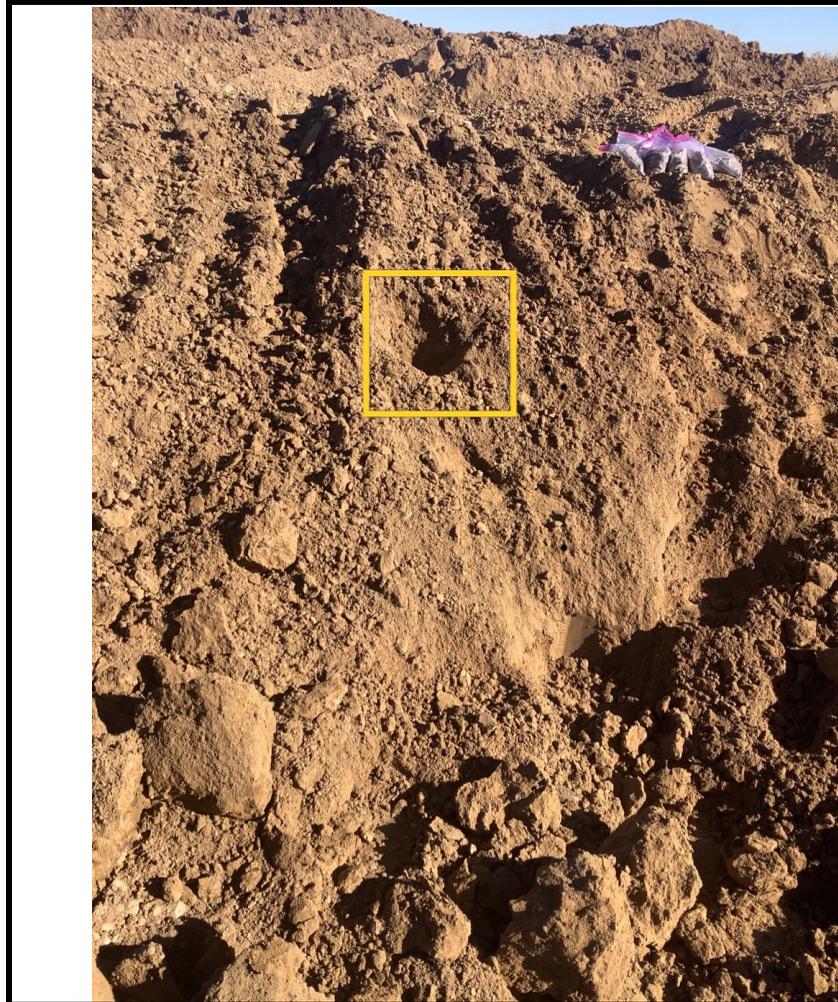


Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: Facing NW Two meter houses on site, separator appears to be previously removed.			

Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: Facility / site photo			

Photographic Log

					
Material:	Volume:	Contents:	Equipment ID: SS01@2.5' , FS01@4'		Equipment Type:
Notes/Conditions: PBV pit			Notes/Conditions:		

Photographic Log


Equipment ID: SS02@2.5'		Equipment Type:		Equipment ID: SS03@2.5'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log



Equipment ID: FS02@4'		Equipment Type:		Equipment ID: SS04@2.5'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log



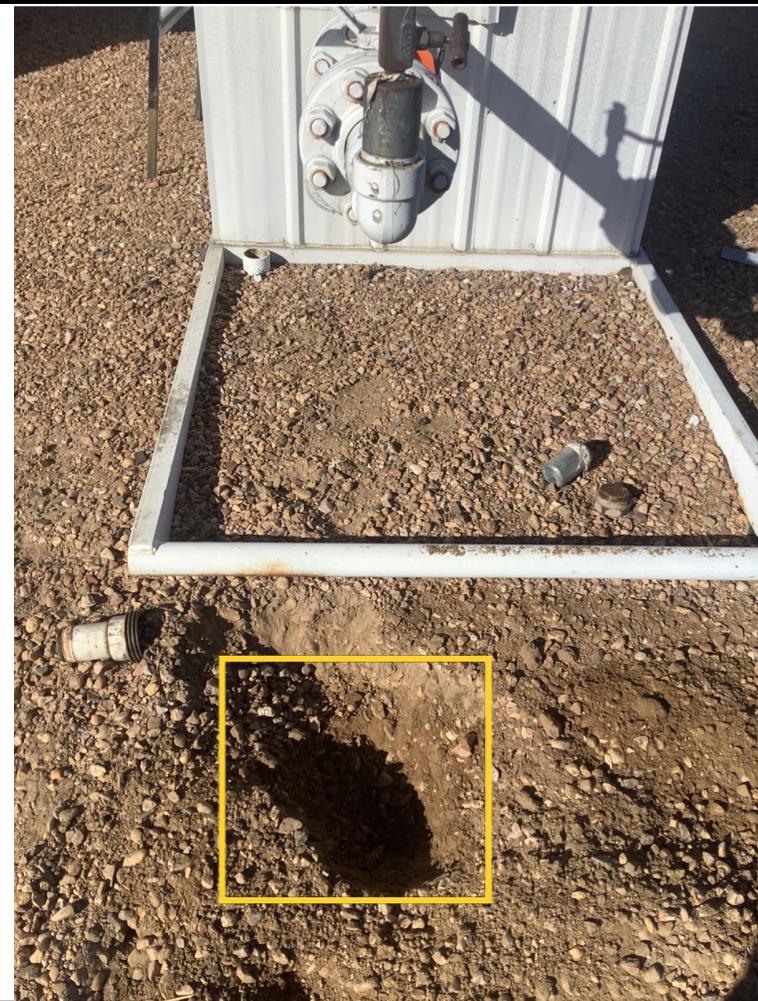
Equipment ID: SS05@2.5'		Equipment Type:		Equipment ID: SS06@2.5'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log



Equipment ID: AST02@2.5'		Equipment Type:		Equipment ID: AST01@2.5'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log



Equipment ID: MH01@0.5'		Equipment Type:		Equipment ID: MH02@0.5'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: HC odor observed. Ground not stained, but visibly wet in sample area				Notes/Conditions:			

Photographic Log



Equipment ID: SEP01-DL@3'		Equipment Type:		Equipment ID: SEP02-DL@2'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log



Equipment ID: SEP01-FL@3'		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions:			

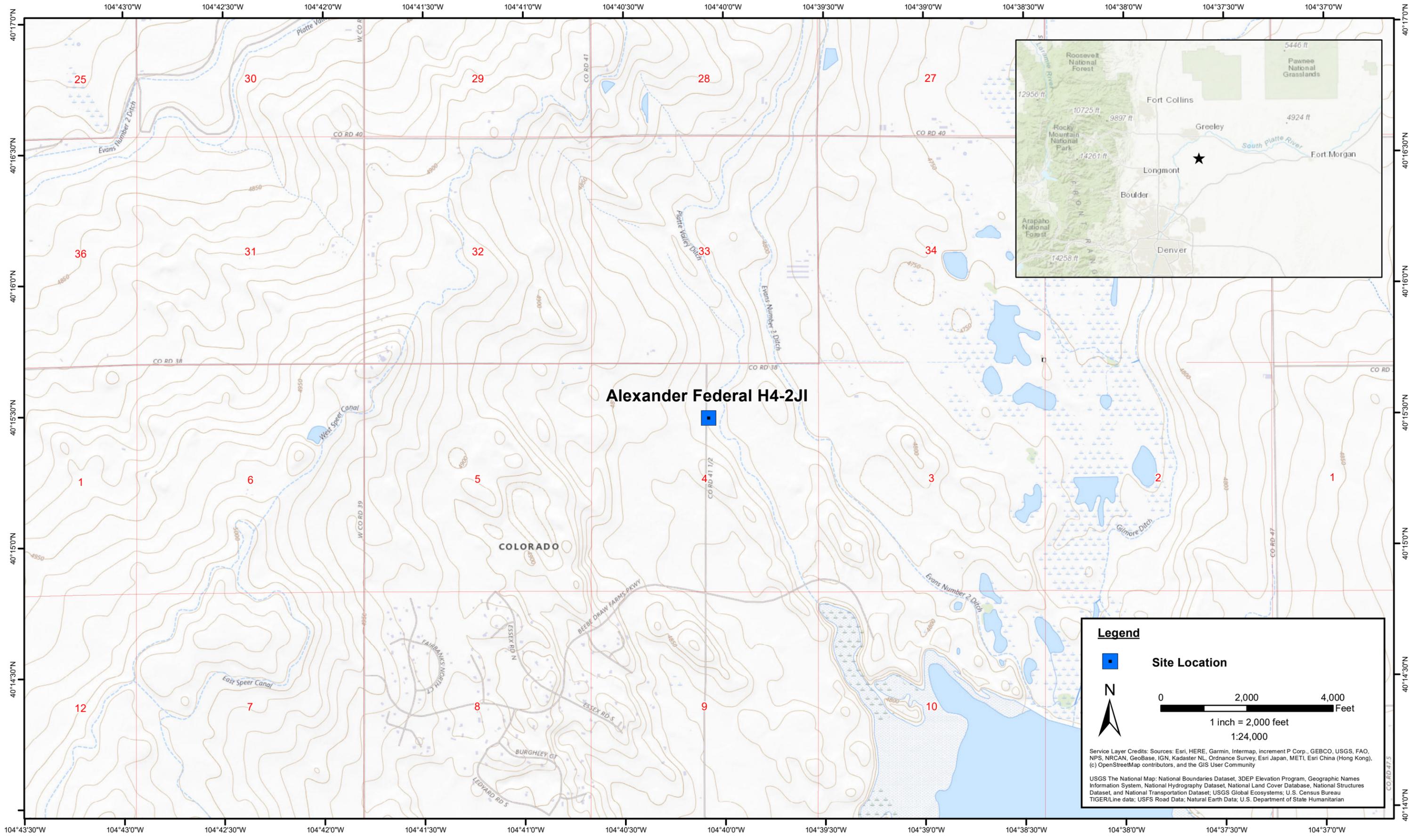
Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions:			

Photographic Log



Equipment ID: MH03@2.5'		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions:			

Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: Amount of soil removed from meter house one			



DATE:	November 2023
DESIGNED BY:	J. Whritenour
DRAWN BY:	L. Reed



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

Noble Energy, Inc - DJ Basin
Alexander Federal H4-2JI
 NWNE, Section 4, Township 3 North, Range 65 West
 Weld County, Colorado

Site Location Map

Figure
1



DATE: 11/06/2023

DESIGNED BY: JW

DRAWN BY: HM



Tasman Geosciences, Inc.
 6855 W 119th Avenue
 Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Alexander Federal H4-2J1
 NWNE, Section 4, Township 3 North, Range 65 West
 Weld County, Colorado

Tank Battery Closure & Soil
 Analytical Results Map
 (10/18/2023 & 10/19/2023)

FIGURE
 2

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 03, 2023

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

RE: Noble - Alexander Federal H4-2JI

Work Order #2310351

Enclosed are the results of analyses for samples received by Summit Scientific on 10/18/23 17:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury
President



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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN

Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0.5'	2310351-01	Soil	10/18/23 09:42	10/18/23 17:40
AST02@0.5'	2310351-02	Soil	10/18/23 09:43	10/18/23 17:40
FS01@4'	2310351-03	Soil	10/18/23 09:15	10/18/23 17:40
FS02@4'	2310351-04	Soil	10/18/23 09:16	10/18/23 17:40
SS05@2.5'	2310351-09	Soil	10/18/23 09:21	10/18/23 17:40
SS06@2.5'	2310351-10	Soil	10/18/23 09:22	10/18/23 17:40
SEP01-DL@3'	2310351-12	Soil	10/18/23 10:12	10/18/23 17:40
SEP02-DL@2'	2310351-13	Soil	10/18/23 10:13	10/18/23 17:40
SEP01-FL@3'	2310351-14	Soil	10/18/23 10:15	10/18/23 17:40

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

S₂

2310351.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 2

Client: Tasman Geosciences Project Manager: Jake Whritenour, Invoice:
 Address: 6855 W. 119th Ave. E-Mail: Jwhritenour@tasman-geo.com
 City/State/Zip: Broomfield / CO/ 80020
 Phone: 231-292-2576 Project Name: Alexander Federal # 4-2JI Mignel Barron
 Sampler Name: Elyse Hossink Project Number: UWRWF- A3232 - ABN

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron- HWS		HOLD
1	AST01 @ 0.5'	10/18/23	0942	3			/			/			/	/	/	/	/			pH, EC, SAR by saturated paste
2	AST02 @ 0.5'		0943																	
3	FS01 @ 4'		0915																	
4	FS02 @ 4'		0916																	
5	SS01 @ 2.5'		0917																	
6	SS02 @ 2.5'		0918																	
7	SS03 @ 2.5'		0919																	
8	SS04 @ 2.5'		0920																	
9	SS05 @ 2.5'		0921																	
10	SS06 @ 2.5'		0922																	

Relinquished by: Elyse Hossink Elyse Hossink	Date/Time: 1330 10/18/23	Received by: Tasman's Lock Box	Date/Time: 1330 10/18/23	Turn Around Time (Check) ___ Same Day ___ 24 hours <input checked="" type="checkbox"/> ___ 48 hours Sample Integrity: Temperature Upon Receipt: 12.4 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 1740 10/18/23	Received by: [Signature]	Date/Time: 1740 10/18/23		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Client: Tasman Geosciences	Project Manager: Jake Whritenour, Invoice:
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com
City/State/Zip: Broomfield / CO/ 80020	
Phone: 231-292-2576	Project Name: <u>Alexander Federal H4-2JI</u>
Sampler Name: Elyse Hossink	Project Number: <u>UWRWE-A3231-ABN</u> <u>Miguel Barron</u>

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC- 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron- HWS	HOLD			
1	MH01 @ 0.5'	10/18/23	0948	3			/			/				/	/	/	/	/	/		pH, EC, SAR by saturated paste	
2	SEPO1 - DL @ 3'		1012																			
3	SEPO2 - DL @ 2'		1013																			
4	SEPO1 - FL @ 3'		1015																			
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by: <u>Elyse Hossink</u>	Date/Time: <u>1330</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>1330</u>	Turn Around Time (Check)	Notes:
Relinquished by: <u>Elyse Hossink</u>	Date/Time: <u>10/18/23</u>	Received by:	Date/Time: <u>10/18/23</u>	<input type="checkbox"/> Same Day 72 hours	
Tasman's Lock Box				<input checked="" type="checkbox"/> 24 hours Standard	
Relinquished by:	Date/Time:	Received by:	Date/Time:	<input type="checkbox"/> 48 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>12.4</u>	
				Samples Intact: <input checked="" type="checkbox"/> Yes No	

S₂

Sample Receipt Checklist

S2 Work Order# 2310351

2/2

Client: Tasman

Client Project ID: Alexander Federal H 42Jr

Shipped 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)

Thermometer #

	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"/>	no 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 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 Name

10/18/23

Date/Time

2310351



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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

AST01@0.5'
2310351-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGJ0804	10/19/23	10/20/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0339	84.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0450	113 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0436	109 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGJ0805	"	10/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.24	65.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project Number: UWRWE-A3231-ABN
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Reported:
11/03/23 14:33

AST01@0.5'
2310351-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0766	10/19/23	10/19/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0243	72.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0244	73.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0974	10/25/23	10/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/18/23 09:42**

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

AST01@0.5'
2310351-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.07	0.200	mg/kg dry	1	BGJ1057	10/26/23	10/27/23	EPA 6020B	
Barium	46.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.34	0.400	"	"	"	"	"	"	
Lead	3.78	0.200	"	"	"	"	"	"	
Nickel	1.81	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	8.45	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0937	10/24/23	10/24/23	EPA 7196A	

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

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	29.0	0.0500	mg/L dry	1	BGJ0966	10/24/23	10/27/23	EPA 6020B	
Magnesium	7.83	0.0500	"	"	"	"	"	"	
Sodium	5.00	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.213	0.00100	units	1	BGJ1110	10/27/23	10/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Project Number: UWRWE-A3231-ABN
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Reported:
11/03/23 14:33

AST01@0.5'
2310351-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	95.0			%	1	BGJ1003	10/25/23	10/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.189	0.0100		mmhos/cm	1	BGJ0986	10/25/23	10/25/23	EPA 120.1	

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

Date Sampled: **10/18/23 09:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.02			pH Units	1	BGJ0985	10/25/23	10/25/23	EPA 9045D	

Summit Scientific

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Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

AST02@0.5'
2310351-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGJ0804	10/19/23	10/20/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0372	92.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0432	108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0422	106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGJ0805	"	10/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.22	73.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

AST02@0.5'
2310351-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0766	10/19/23	10/19/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0218	65.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0215	64.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0974	10/25/23	10/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/18/23 09:43**

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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

AST02@0.5'
2310351-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.35	0.200	mg/kg dry	1	BGJ1057	10/26/23	10/27/23	EPA 6020B	
Barium	61.9	0.400	"	"	"	"	"	"	
Cadmium	0.220	0.200	"	"	"	"	"	"	
Copper	1.89	0.400	"	"	"	"	"	"	
Lead	5.33	0.200	"	"	"	"	"	"	
Nickel	1.66	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	7.30	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0937	10/24/23	10/24/23	EPA 7196A	

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

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.3	0.0500	mg/L dry	1	BGJ0966	10/24/23	10/27/23	EPA 6020B	
Magnesium	5.55	0.0500	"	"	"	"	"	"	
Sodium	2.07	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0944	0.00100	units	1	BGJ1110	10/27/23	10/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

AST02@0.5'
2310351-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.0		%	1	BGJ1003	10/25/23	10/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.168	0.0100	mmhos/cm	1	BGJ0986	10/25/23	10/25/23	EPA 120.1	

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

Date Sampled: **10/18/23 09:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.90		pH Units	1	BGJ0985	10/25/23	10/25/23	EPA 9045D	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

FS01@4'
2310351-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0804	10/19/23	10/20/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0345	86.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0449	112 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0434	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0805	"	10/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.55	68.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project Number: UWRWE-A3231-ABN
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Reported:
11/03/23 14:33

FS01@4'
2310351-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0766	10/19/23	10/19/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0252	75.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0237	71.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0974	10/25/23	10/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/18/23 09:15**

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 - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

FS01@4'
2310351-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.931	0.200	mg/kg dry	1	BGJ1057	10/26/23	10/27/23	EPA 6020B	
Barium	41.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.17	0.400	"	"	"	"	"	"	
Lead	3.76	0.200	"	"	"	"	"	"	
Nickel	1.80	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	7.73	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0937	10/24/23	10/24/23	EPA 7196A	

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

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	32.0	0.0500	mg/L dry	1	BGJ0966	10/24/23	10/27/23	EPA 6020B	
Magnesium	8.41	0.0500	"	"	"	"	"	"	
Sodium	3.62	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.147	0.00100	units	1	BGJ1110	10/27/23	10/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

FS01@4'
2310351-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	1	BGJ1003	10/25/23	10/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.150	0.0100	mmhos/cm	1	BGJ0986	10/25/23	10/25/23	EPA 120.1	

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

Date Sampled: **10/18/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BGJ0985	10/25/23	10/25/23	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

FS02@4'
2310351-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0804	10/19/23	10/20/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0340	85.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0474	118 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0446	112 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0805	"	10/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.43	67.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

FS02@4'
2310351-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0766	10/19/23	10/19/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0197	59.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0209	62.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0974	10/25/23	10/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/18/23 09:16**

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 - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

FS02@4'
2310351-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.959	0.200	mg/kg dry	1	BGJ1057	10/26/23	10/27/23	EPA 6020B	
Barium	66.5	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.43	0.400	"	"	"	"	"	"	
Lead	5.62	0.200	"	"	"	"	"	"	
Nickel	2.32	0.400	"	"	"	"	"	"	
Silver	0.0253	0.0200	"	"	"	"	"	"	
Zinc	10.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0937	10/24/23	10/24/23	EPA 7196A	

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

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	37.5	0.0500	mg/L dry	1	BGJ0966	10/24/23	10/27/23	EPA 6020B	
Magnesium	7.35	0.0500	"	"	"	"	"	"	
Sodium	3.60	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.141	0.00100	units	1	BGJ1110	10/27/23	10/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

FS02@4'
2310351-04 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	1	BGJ1003	10/25/23	10/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.166	0.0100	mmhos/cm	1	BGJ0986	10/25/23	10/25/23	EPA 120.1	

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

Date Sampled: **10/18/23 09:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BGJ0985	10/25/23	10/25/23	EPA 9045D	

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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SS05@2.5'
2310351-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGJ0804	10/19/23	10/20/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0364	90.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0444	111 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0434	108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGJ0805	"	10/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.92	63.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SS05@2.5'
2310351-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0766	10/19/23	10/19/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0232	69.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0244	73.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0974	10/25/23	10/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/18/23 09:21**

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 - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SS05@2.5'
2310351-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.13	0.200	mg/kg dry	1	BGJ1057	10/26/23	10/27/23	EPA 6020B	
Barium	52.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.43	0.400	"	"	"	"	"	"	
Lead	3.89	0.200	"	"	"	"	"	"	
Nickel	2.48	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	9.67	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0937	10/24/23	10/24/23	EPA 7196A	

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

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	279	0.0500	mg/L dry	1	BGJ0966	10/24/23	10/27/23	EPA 6020B	
Magnesium	29.0	0.0500	"	"	"	"	"	"	
Sodium	2.06	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0314	0.00100	units	1	BGJ1110	10/27/23	10/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SS05@2.5'
2310351-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.8		%	1	BGJ1003	10/25/23	10/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.154	0.0100	mmhos/cm	1	BGJ0986	10/25/23	10/25/23	EPA 120.1	

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

Date Sampled: **10/18/23 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.07		pH Units	1	BGJ0985	10/25/23	10/25/23	EPA 9045D	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SS06@2.5'
2310351-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0804	10/19/23	10/20/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0359	89.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0448	112 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0439	110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0805	"	10/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.44	67.5 %	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 - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SS06@2.5'
2310351-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0766	10/19/23	10/19/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0219	65.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0208	62.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0974	10/25/23	10/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/18/23 09:22**

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 - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SS06@2.5'
2310351-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.996	0.200	mg/kg dry	1	BGJ1057	10/26/23	10/27/23	EPA 6020B	
Barium	42.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.38	0.400	"	"	"	"	"	"	
Lead	3.13	0.200	"	"	"	"	"	"	
Nickel	2.00	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	8.39	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0937	10/24/23	10/24/23	EPA 7196A	

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

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	54.0	0.0500	mg/L dry	1	BGJ0966	10/24/23	10/27/23	EPA 6020B	
Magnesium	9.20	0.0500	"	"	"	"	"	"	
Sodium	3.51	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.116	0.00100	units	1	BGJ1110	10/27/23	10/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
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Reported:
11/03/23 14:33

SS06@2.5'
2310351-10 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.8		%	1	BGJ1003	10/25/23	10/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.147	0.0100	mmhos/cm	1	BGJ0986	10/25/23	10/25/23	EPA 120.1	

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

Date Sampled: **10/18/23 09:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.17		pH Units	1	BGJ0985	10/25/23	10/25/23	EPA 9045D	

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Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SEP01-DL@3'
2310351-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGJ0804	10/19/23	10/20/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0371	92.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0454	114 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0446	111 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGJ0805	"	10/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.16	73.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SEP01-DL@3'
2310351-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0766	10/19/23	10/19/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0275	82.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0249	74.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0974	10/25/23	10/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/18/23 10:12**

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 - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SEP01-DL@3'
2310351-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.09	0.200	mg/kg dry	1	BGJ1057	10/26/23	10/27/23	EPA 6020B
Barium	63.6	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.60	0.400	"	"	"	"	"	"
Lead	4.60	0.200	"	"	"	"	"	"
Nickel	2.58	0.400	"	"	"	"	"	"
Silver	0.0233	0.0200	"	"	"	"	"	"
Zinc	11.1	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0937	10/24/23	10/24/23	EPA 7196A	

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

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	318	0.0500	mg/L dry	1	BGJ0966	10/24/23	10/27/23	EPA 6020B	
Magnesium	63.6	0.0500	"	"	"	"	"	"	
Sodium	3.18	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0426	0.00100	units	1	BGJ1110	10/27/23	10/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SEP01-DL@3'
2310351-12 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.1		%	1	BGJ1003	10/25/23	10/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0649	0.0100	mmhos/cm	1	BGJ0986	10/25/23	10/25/23	EPA 120.1	

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

Date Sampled: **10/18/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.02		pH Units	1	BGJ0985	10/25/23	10/25/23	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SEP02-DL@2'
2310351-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGJ0804	10/19/23	10/20/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0368	92.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0454	113 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0443	111 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGJ0805	"	10/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.35	66.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SEP02-DL@2'
2310351-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0766	10/19/23	10/19/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0216	64.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0215	64.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0974	10/25/23	10/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SEP02-DL@2'
2310351-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.14	0.200	mg/kg dry	1	BGJ1057	10/26/23	10/27/23	EPA 6020B	
Barium	66.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.71	0.400	"	"	"	"	"	"	
Lead	4.75	0.200	"	"	"	"	"	"	
Nickel	2.68	0.400	"	"	"	"	"	"	
Silver	0.0245	0.0200	"	"	"	"	"	"	
Zinc	11.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0937	10/24/23	10/24/23	EPA 7196A	

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

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	323	0.0500	mg/L dry	1	BGJ0966	10/24/23	10/27/23	EPA 6020B	
Magnesium	63.6	0.0500	"	"	"	"	"	"	
Sodium	3.34	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0445	0.00100	units	1	BGJ1110	10/27/23	10/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
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Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SEP02-DL@2'
2310351-13 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.9		%	1	BGJ1003	10/25/23	10/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.124	0.0100	mmhos/cm	1	BGJ0986	10/25/23	10/25/23	EPA 120.1	

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

Date Sampled: **10/18/23 10:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.15		pH Units	1	BGJ0985	10/25/23	10/25/23	EPA 9045D	

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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SEP01-FL@3'
2310351-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0804	10/19/23	10/20/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0390	97.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0451	113 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0436	109 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0805	"	10/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.48	59.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

SEP01-FL@3'
2310351-14 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0766	10/19/23	10/19/23	EPA 8270D SIM	
Anthracene	0.00715	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0106	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0132	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.00604	0.00500	"	"	"	"	"	"	
Chrysene	0.0140	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0392	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.00637	0.00500	"	"	"	"	"	"	
Pyrene	0.0385	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0244	73.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0238	71.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0974	10/25/23	10/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.931	0.200	mg/kg dry	1	BGJ1057	10/26/23	10/27/23	EPA 6020B	

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Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
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Reported:
11/03/23 14:33

SEP01-FL@3'
2310351-14 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	56.8	0.400	mg/kg dry	1	BGJ1057	10/26/23	10/27/23	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.78	0.400	"	"	"	"	"	"	
Lead	4.00	0.200	"	"	"	"	"	"	
Nickel	1.70	0.400	"	"	"	"	"	"	
Silver	0.0263	0.0200	"	"	"	"	"	"	
Zinc	15.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0937	10/24/23	10/24/23	EPA 7196A	

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

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.6	0.0500	mg/L dry	1	BGJ0966	10/24/23	10/27/23	EPA 6020B	
Magnesium	5.66	0.0500	"	"	"	"	"	"	
Sodium	2.08	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0998	0.00100	units	1	BGJ1110	10/27/23	10/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
11/03/23 14:33

SEP01-FL@3'
2310351-14 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.8	%	1	BGJ1003	10/25/23	10/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.156	0.0100	mmhos/cm	1	BGJ0986	10/25/23	10/25/23	EPA 120.1	

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

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.91		pH Units	1	BGJ0985	10/25/23	10/25/23	EPA 9045D	

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Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
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Reported:
11/03/23 14:33

SEP01-FL@3'
2310351-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	0.00505	0.00500	mg/kg	1	BGJ1248	10/31/23	11/01/23	EPA 8270D SIM	

Date Sampled: **10/18/23 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0265	79.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0244	73.2 %	40-150		"	"	"	"	

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Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGJ0804 - EPA 5030 Soil MS

Blank (BGJ0804-BLK1)

Prepared: 10/19/23 Analyzed: 10/20/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0347		"	0.0400		86.8	50-150			
<i>Surrogate: Toluene-d8</i>	0.0504		"	0.0400		126	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0473		"	0.0400		118	50-150			

LCS (BGJ0804-BS1)

Prepared: 10/19/23 Analyzed: 10/20/23

Benzene	0.102	0.0020	mg/kg	0.100		102	70-130			
Toluene	0.123	0.0050	"	0.100		123	70-130			
Ethylbenzene	0.112	0.0050	"	0.100		112	70-130			
m,p-Xylene	0.228	0.010	"	0.200		114	70-130			
o-Xylene	0.102	0.0050	"	0.100		102	70-130			
1,2,4-Trimethylbenzene	0.105	0.0050	"	0.100		105	70-130			
1,3,5-Trimethylbenzene	0.108	0.0050	"	0.100		108	70-130			
Naphthalene	0.0880	0.0038	"	0.100		88.0	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0339		"	0.0400		84.8	50-150			
<i>Surrogate: Toluene-d8</i>	0.0463		"	0.0400		116	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0385		"	0.0400		96.3	50-150			

Matrix Spike (BGJ0804-MS1)

Source: 2310351-01

Prepared: 10/19/23 Analyzed: 10/20/23

Benzene	0.0933	0.0020	mg/kg	0.100	ND	93.3	70-130			
Toluene	0.115	0.0050	"	0.100	ND	115	70-130			
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130			
m,p-Xylene	0.212	0.010	"	0.200	ND	106	70-130			
o-Xylene	0.0942	0.0050	"	0.100	ND	94.2	70-130			
1,2,4-Trimethylbenzene	0.0929	0.0050	"	0.100	ND	92.9	70-130			
1,3,5-Trimethylbenzene	0.0984	0.0050	"	0.100	ND	98.4	70-130			
Naphthalene	0.0743	0.0038	"	0.100	ND	74.3	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0331		"	0.0400		82.6	50-150			
<i>Surrogate: Toluene-d8</i>	0.0456		"	0.0400		114	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0404		"	0.0400		101	50-150			

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Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

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

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

Batch BGJ0804 - EPA 5030 Soil MS

Matrix Spike Dup (BGJ0804-MSD1)	Source: 2310351-01			Prepared: 10/19/23		Analyzed: 10/20/23				
Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130	10.8	30	
Toluene	0.121	0.0050	"	0.100	ND	121	70-130	5.20	30	
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	1.90	30	
m,p-Xylene	0.207	0.010	"	0.200	ND	103	70-130	2.31	30	
o-Xylene	0.0928	0.0050	"	0.100	ND	92.8	70-130	1.44	30	
1,2,4-Trimethylbenzene	0.0896	0.0050	"	0.100	ND	89.6	70-130	3.55	30	
1,3,5-Trimethylbenzene	0.0950	0.0050	"	0.100	ND	95.0	70-130	3.54	30	
Naphthalene	0.0681	0.0038	"	0.100	ND	68.1	70-130	8.72	30	QLCS-01
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0378</i>		<i>"</i>	<i>0.0400</i>		<i>94.5</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0461</i>		<i>"</i>	<i>0.0400</i>		<i>115</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			

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Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGJ0805 - EPA 3550A

Blank (BGJ0805-BLK1)

Prepared: 10/19/23 Analyzed: 10/21/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.7		"	12.5		109		30-150			

LCS (BGJ0805-BS1)

Prepared: 10/19/23 Analyzed: 10/21/23

C10-C28 (DRO)	401	50	mg/kg	500		80.3		70-130			
Surrogate: <i>o</i> -Terphenyl	9.91		"	12.5		79.2		30-150			

Matrix Spike (BGJ0805-MS1)

Source: 2310351-01

Prepared: 10/19/23 Analyzed: 10/21/23

C10-C28 (DRO)	468	50	mg/kg	500	32.0	87.2		70-130			
Surrogate: <i>o</i> -Terphenyl	9.74		"	12.5		77.9		30-150			

Matrix Spike Dup (BGJ0805-MSD1)

Source: 2310351-01

Prepared: 10/19/23 Analyzed: 10/21/23

C10-C28 (DRO)	492	50	mg/kg	500	32.0	92.0		70-130	4.95	20	
Surrogate: <i>o</i> -Terphenyl	10.1		"	12.5		80.7		30-150			

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Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BGJ0766 - EPA 5030 Soil MS

Blank (BGJ0766-BLK1)

Prepared & Analyzed: 10/19/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0439</i>		"	<i>0.0333</i>		<i>132</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0319</i>		"	<i>0.0333</i>		<i>95.6</i>		<i>40-150</i>		

LCS (BGJ0766-BS1)

Prepared & Analyzed: 10/19/23

Acenaphthene	0.0266	0.00500	mg/kg	0.0333		79.9		31-137		
Anthracene	0.0318	0.00500	"	0.0333		95.5		30-120		
Benzo (a) anthracene	0.0292	0.00500	"	0.0333		87.5		30-120		
Benzo (a) pyrene	0.0290	0.00500	"	0.0333		86.9		30-120		
Benzo (b) fluoranthene	0.0289	0.00500	"	0.0333		86.6		30-120		
Benzo (k) fluoranthene	0.0303	0.00500	"	0.0333		90.8		30-120		
Chrysene	0.0320	0.00500	"	0.0333		95.9		30-120		
Dibenz (a,h) anthracene	0.0257	0.00500	"	0.0333		77.1		30-120		
Fluoranthene	0.0320	0.00500	"	0.0333		96.0		30-120		
Fluorene	0.0256	0.00500	"	0.0333		76.8		30-120		
Indeno (1,2,3-cd) pyrene	0.0349	0.00500	"	0.0333		105		30-120		
Pyrene	0.0324	0.00500	"	0.0333		97.3		35-142		
1-Methylnaphthalene	0.0394	0.00500	"	0.0333		118		35-142		
2-Methylnaphthalene	0.0417	0.00500	"	0.0333		125		35-142		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0277</i>		"	<i>0.0333</i>		<i>83.2</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0317</i>		"	<i>0.0333</i>		<i>95.0</i>		<i>40-150</i>		

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Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGJ0766 - EPA 5030 Soil MS

Matrix Spike (BGJ0766-MS1)	Source: 2310337-01			Prepared & Analyzed: 10/19/23							
Acenaphthene	0.0173	0.00500	mg/kg	0.0333	ND	51.8	31-137				
Anthracene	0.0233	0.00500	"	0.0333	ND	70.0	30-120				
Benzo (a) anthracene	0.0175	0.00500	"	0.0333	ND	52.4	30-120				
Benzo (a) pyrene	0.0143	0.00500	"	0.0333	ND	42.9	30-120				
Benzo (b) fluoranthene	0.0140	0.00500	"	0.0333	ND	42.0	30-120				
Benzo (k) fluoranthene	0.0153	0.00500	"	0.0333	ND	45.9	30-120				
Chrysene	0.0181	0.00500	"	0.0333	ND	54.2	30-120				
Dibenz (a,h) anthracene	0.0162	0.00500	"	0.0333	ND	48.5	30-120				
Fluoranthene	0.0216	0.00500	"	0.0333	ND	64.7	30-120				
Fluorene	0.0174	0.00500	"	0.0333	ND	52.2	30-120				
Indeno (1,2,3-cd) pyrene	0.0173	0.00500	"	0.0333	ND	52.0	30-120				
Pyrene	0.0177	0.00500	"	0.0333	ND	53.1	35-142				
1-Methylnaphthalene	0.0221	0.00500	"	0.0333	ND	66.3	15-130				
2-Methylnaphthalene	0.0245	0.00500	"	0.0333	ND	73.4	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0169</i>		<i>"</i>	<i>0.0333</i>		<i>50.8</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0222</i>		<i>"</i>	<i>0.0333</i>		<i>66.6</i>	<i>40-150</i>				

Matrix Spike Dup (BGJ0766-MSD1)	Source: 2310337-01			Prepared & Analyzed: 10/19/23							
Acenaphthene	0.0162	0.00500	mg/kg	0.0333	ND	48.6	31-137	6.44	30		
Anthracene	0.0184	0.00500	"	0.0333	ND	55.1	30-120	23.9	30		
Benzo (a) anthracene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	0.893	30		
Benzo (a) pyrene	0.0172	0.00500	"	0.0333	ND	51.7	30-120	18.5	30		
Benzo (b) fluoranthene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	14.4	30		
Benzo (k) fluoranthene	0.0176	0.00500	"	0.0333	ND	52.8	30-120	14.1	30		
Chrysene	0.0182	0.00500	"	0.0333	ND	54.5	30-120	0.455	30		
Dibenz (a,h) anthracene	0.0196	0.00500	"	0.0333	ND	58.9	30-120	19.3	30		
Fluoranthene	0.0170	0.00500	"	0.0333	ND	51.1	30-120	23.6	30		
Fluorene	0.0149	0.00500	"	0.0333	ND	44.8	30-120	15.3	30		
Indeno (1,2,3-cd) pyrene	0.0219	0.00500	"	0.0333	ND	65.7	30-120	23.3	30		
Pyrene	0.0197	0.00500	"	0.0333	ND	59.2	35-142	10.8	30		
1-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.3	15-130	4.58	50		
2-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.1	15-130	4.68	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0155</i>		<i>"</i>	<i>0.0333</i>		<i>46.6</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0173</i>		<i>"</i>	<i>0.0333</i>		<i>51.9</i>	<i>40-150</i>				

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGJ1248 - EPA 5030 Soil MS

Blank (BGJ1248-BLK1)

Prepared: 10/31/23 Analyzed: 11/01/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0134</i>		"	<i>0.0333</i>		<i>40.1</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0162</i>		"	<i>0.0333</i>		<i>48.6</i>	<i>40-150</i>			

LCS (BGJ1248-BS1)

Prepared: 10/31/23 Analyzed: 11/01/23

Acenaphthene	0.0216	0.00500	mg/kg	0.0333	64.9	31-137
Anthracene	0.0262	0.00500	"	0.0333	78.5	30-120
Benzo (a) anthracene	0.0218	0.00500	"	0.0333	65.3	30-120
Benzo (a) pyrene	0.0214	0.00500	"	0.0333	64.3	30-120
Benzo (b) fluoranthene	0.0224	0.00500	"	0.0333	67.3	30-120
Benzo (k) fluoranthene	0.0249	0.00500	"	0.0333	74.6	30-120
Chrysene	0.0231	0.00500	"	0.0333	69.4	30-120
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333	59.0	30-120
Fluoranthene	0.0254	0.00500	"	0.0333	76.1	30-120
Fluorene	0.0220	0.00500	"	0.0333	66.0	30-120
Indeno (1,2,3-cd) pyrene	0.0255	0.00500	"	0.0333	76.6	30-120
Pyrene	0.0286	0.00500	"	0.0333	85.8	35-142
1-Methylnaphthalene	0.0213	0.00500	"	0.0333	64.0	35-142
2-Methylnaphthalene	0.0228	0.00500	"	0.0333	68.3	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0223</i>		"	<i>0.0333</i>	<i>66.9</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0266</i>		"	<i>0.0333</i>	<i>79.8</i>	<i>40-150</i>

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGJ1248 - EPA 5030 Soil MS

Matrix Spike (BGJ1248-MS1)

Source: 2310559-01

Prepared: 10/31/23 Analyzed: 11/01/23

Acenaphthene	0.0181	0.00500	mg/kg	0.0333	ND	54.2	31-137			
Anthracene	0.0182	0.00500	"	0.0333	ND	54.7	30-120			
Benzo (a) anthracene	0.0162	0.00500	"	0.0333	ND	48.5	30-120			
Benzo (a) pyrene	0.0179	0.00500	"	0.0333	ND	53.7	30-120			
Benzo (b) fluoranthene	0.0172	0.00500	"	0.0333	ND	51.5	30-120			
Benzo (k) fluoranthene	0.0190	0.00500	"	0.0333	ND	57.0	30-120			
Chrysene	0.0161	0.00500	"	0.0333	ND	48.3	30-120			
Dibenz (a,h) anthracene	0.0185	0.00500	"	0.0333	ND	55.4	30-120			
Fluoranthene	0.0182	0.00500	"	0.0333	ND	54.7	30-120			
Fluorene	0.0190	0.00500	"	0.0333	ND	56.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0192	0.00500	"	0.0333	ND	57.5	30-120			
Pyrene	0.0211	0.00500	"	0.0333	ND	63.2	35-142			
1-Methylnaphthalene	0.0138	0.00500	"	0.0333	ND	41.3	15-130			
2-Methylnaphthalene	0.0140	0.00500	"	0.0333	ND	41.9	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0155		"	0.0333		46.4	40-150			
Surrogate: Fluoranthene-d10	0.0196		"	0.0333		58.8	40-150			

Matrix Spike Dup (BGJ1248-MSD1)

Source: 2310559-01

Prepared: 10/31/23 Analyzed: 11/01/23

Acenaphthene	0.0180	0.00500	mg/kg	0.0333	ND	54.1	31-137	0.209	30
Anthracene	0.0166	0.00500	"	0.0333	ND	49.7	30-120	9.42	30
Benzo (a) anthracene	0.0153	0.00500	"	0.0333	ND	45.9	30-120	5.55	30
Benzo (a) pyrene	0.0156	0.00500	"	0.0333	ND	46.8	30-120	13.9	30
Benzo (b) fluoranthene	0.0149	0.00500	"	0.0333	ND	44.8	30-120	13.9	30
Benzo (k) fluoranthene	0.0168	0.00500	"	0.0333	ND	50.5	30-120	12.1	30
Chrysene	0.0149	0.00500	"	0.0333	ND	44.6	30-120	7.98	30
Dibenz (a,h) anthracene	0.0151	0.00500	"	0.0333	ND	45.2	30-120	20.2	30
Fluoranthene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	10.0	30
Fluorene	0.0180	0.00500	"	0.0333	ND	54.1	30-120	5.05	30
Indeno (1,2,3-cd) pyrene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	2.64	30
Pyrene	0.0203	0.00500	"	0.0333	ND	61.0	35-142	3.58	30
1-Methylnaphthalene	0.0145	0.00500	"	0.0333	ND	43.5	15-130	5.20	50
2-Methylnaphthalene	0.0122	0.00500	"	0.0333	ND	36.6	15-130	13.5	50
Surrogate: 2-Methylnaphthalene-d10	0.0164		"	0.0333		49.1	40-150		
Surrogate: Fluoranthene-d10	0.0171		"	0.0333		51.2	40-150		

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

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

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

Batch BGJ0974 - EPA 3050B

Blank (BGJ0974-BLK1)

Prepared: 10/25/23 Analyzed: 10/26/23

Boron ND 2.00 mg/L

LCS (BGJ0974-BS1)

Prepared: 10/25/23 Analyzed: 10/26/23

Boron 5.72 2.00 mg/L 5.00 114 80-120

Duplicate (BGJ0974-DUP1)

Source: 2308318-01

Prepared: 10/25/23 Analyzed: 10/26/23

Boron 0.351 2.00 mg/L 0.335 4.52 20

Matrix Spike (BGJ0974-MS1)

Source: 2308318-01

Prepared: 10/25/23 Analyzed: 10/26/23

Boron 6.85 2.00 mg/L 5.00 0.335 130 75-125 QM-07

Matrix Spike Dup (BGJ0974-MSD1)

Source: 2308318-01

Prepared: 10/25/23 Analyzed: 10/26/23

Boron 7.09 2.00 mg/L 5.00 0.335 135 75-125 3.38 25 QM-07

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGJ1057 - EPA 3050B

Blank (BGJ1057-BLK1)

Prepared: 10/26/23 Analyzed: 10/27/23

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

LCS (BGJ1057-BS1)

Prepared: 10/26/23 Analyzed: 10/27/23

Arsenic	48.0	0.200	mg/kg wet	40.0	120	80-120
Barium	37.5	0.400	"	40.0	93.9	80-120
Cadmium	1.89	0.200	"	2.00	94.6	80-120
Copper	46.9	0.400	"	40.0	117	80-120
Lead	17.4	0.200	"	20.0	87.2	80-120
Nickel	47.5	0.400	"	40.0	119	80-120
Silver	1.83	0.0200	"	2.00	91.3	80-120
Zinc	42.4	0.400	"	40.0	106	80-120
Selenium	4.23	0.260	"	4.00	106	80-120

Duplicate (BGJ1057-DUP1)

Source: 2310351-01

Prepared: 10/26/23 Analyzed: 10/27/23

Arsenic	0.989	0.200	mg/kg dry	1.07	7.81	20
Barium	48.4	0.400	"	46.4	4.13	20
Cadmium	0.161	0.200	"	0.140	14.0	20
Copper	2.30	0.400	"	2.34	1.49	20
Lead	4.30	0.200	"	3.78	12.7	20
Nickel	1.93	0.400	"	1.81	6.38	20
Silver	0.0173	0.0200	"	0.0135	24.7	20
Zinc	9.03	0.400	"	8.45	6.63	20
Selenium	ND	0.260	"	ND		20

QR-01

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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGJ1057 - EPA 3050B

Matrix Spike (BGJ1057-MS1)

Source: 2310351-01

Prepared: 10/26/23 Analyzed: 10/27/23

Arsenic	22.2	0.200	mg/kg dry	42.1	1.07	50.2	75-125				QM-07
Barium	96.7	0.400	"	42.1	46.4	119	75-125				
Cadmium	2.22	0.200	"	2.10	0.140	99.0	75-125				
Copper	22.9	0.400	"	42.1	2.34	48.8	75-125				QM-07
Lead	22.5	0.200	"	21.0	3.78	89.2	75-125				
Nickel	22.9	0.400	"	42.1	1.81	50.0	75-125				QM-07
Silver	2.01	0.0200	"	2.10	0.0135	94.9	75-125				
Zinc	30.3	0.400	"	42.1	8.45	52.0	75-125				QM-07
Selenium	6.65	0.260	"	4.21	ND	158	75-125				QM-07

Matrix Spike Dup (BGJ1057-MSD1)

Source: 2310351-01

Prepared: 10/26/23 Analyzed: 10/27/23

Arsenic	22.5	0.200	mg/kg dry	42.1	1.07	50.9	75-125	1.31	25		QM-07
Barium	83.7	0.400	"	42.1	46.4	88.4	75-125	14.5	25		
Cadmium	1.90	0.200	"	2.10	0.140	83.5	75-125	15.8	25		
Copper	23.2	0.400	"	42.1	2.34	49.6	75-125	1.55	25		QM-07
Lead	19.9	0.200	"	21.0	3.78	76.4	75-125	12.7	25		
Nickel	23.1	0.400	"	42.1	1.81	50.6	75-125	0.947	25		QM-07
Silver	1.74	0.0200	"	2.10	0.0135	81.8	75-125	14.7	25		
Zinc	29.7	0.400	"	42.1	8.45	50.5	75-125	2.08	25		QM-07
Selenium	6.95	0.260	"	4.21	ND	165	75-125	4.48	25		QM-07

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGJ0937 - 3060A Mod

Blank (BGJ0937-BLK1)

Prepared & Analyzed: 10/24/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGJ0937-BS1)

Prepared & Analyzed: 10/24/23

Chromium, Hexavalent 23.8 0.30 mg/kg wet 25.0 95.4 80-120

Duplicate (BGJ0937-DUP1)

Source: 2310351-01

Prepared & Analyzed: 10/24/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGJ0937-MS1)

Source: 2310351-01

Prepared & Analyzed: 10/24/23

Chromium, Hexavalent 25.8 0.30 mg/kg dry 26.3 ND 98.0 75-125

Matrix Spike Dup (BGJ0937-MSD1)

Source: 2310351-01

Prepared & Analyzed: 10/24/23

Chromium, Hexavalent 25.5 0.30 mg/kg dry 26.3 ND 96.8 75-125 1.23 20

Summit Scientific

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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

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

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

Batch BGJ0966 - General Preparation

Blank (BGJ0966-BLK1)

Prepared: 10/24/23 Analyzed: 10/26/23

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

LCS (BGJ0966-BS1)

Prepared: 10/24/23 Analyzed: 10/26/23

Calcium	5.40	0.0500	mg/L wet	5.00	108	70-130				
Magnesium	5.36	0.0500	"	5.00	107	70-130				
Sodium	5.56	0.0500	"	5.00	111	70-130				

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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

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

Summit Scientific

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

Batch BGJ1003 - General Preparation

Duplicate (BGJ1003-DUP1)		Source: 2310337-01			Prepared & Analyzed: 10/25/23				
% Solids	84.3		%		84.3		0.0135	20	

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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

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

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

Batch BGJ0986 - General Preparation

Blank (BGJ0986-BLK1)

Prepared & Analyzed: 10/25/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGJ0986-BS1)

Prepared & Analyzed: 10/25/23

Specific Conductance (EC) 0.150 0.0100 mmhos/cm 0.150 99.7 95-105

Duplicate (BGJ0986-DUP1)

Source: 2310351-01

Prepared & Analyzed: 10/25/23

Specific Conductance (EC) 0.189 0.0100 mmhos/cm 0.189 0.00 20

Summit Scientific

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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

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

Summit Scientific

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

Batch BGJ0985 - General Preparation

LCS (BGJ0985-BS1)

Prepared & Analyzed: 10/25/23

pH	9.01	pH Units	9.18	98.1	95-105
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Duplicate (BGJ0985-DUP1)

Source: 2310351-01

Prepared & Analyzed: 10/25/23

pH	8.02	pH Units	8.02	0.00	20
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/03/23 14:33

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.
- 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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 06, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

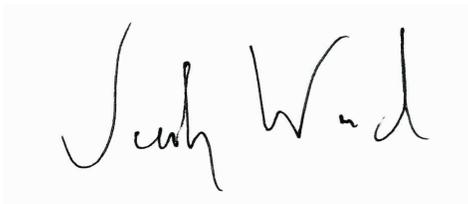
Broomfield, CO 80020

RE: Noble - Alexander Federal H4-2JI

Work Order #2310382

Enclosed are the results of analyses for samples received by Summit Scientific on 10/19/23 17:47. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a distinct "W".

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MH03@2.5'	2310382-01	Soil	10/19/23 08:17	10/19/23 17:47

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

S₂

2310382

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Tasman Geosciences Project Manager: Jake Whritenour, Invoice:
Address: 6855 W. 119th Ave. E-Mail: Jwhritenour@tasman-geo.com
City/State/Zip: Broomfield / CO/ 80020
Phone: 231-292-2576 Project Name: Alexander Federal H4-2JI Myrel
Sampler Name: Elyse Hossink Project Number: UWRWE-A3231-ABN 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	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron-HWS	
1	MH03 @ 2-5'	10/19/23	0817	3			/			/			/	/	/	/	/		pH, EC, SAR by saturated paste
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: <i>Elyse Hossink</i> Elyse Hossink	Date/Time: 1400 10/19/23	Received by: Tasman's Lock Box	Date/Time: 1400 10/19/23	Turn Around Time (Check) ___ Same Day ___ 72 hours ___ 24 hours <input checked="" type="checkbox"/> Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: <u>9.8</u> Samples Intact: <input checked="" type="radio"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 10/19/23 1747	Received by: <i>[Signature]</i>	Date/Time: 10/19/23 1747		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2310382

Client: Tasman

Client Project ID: Alexander Federal H4 2JI

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

Matrix (Check all that apply)

Air

Soil/Solid

Water

Other

Temp (°C)

9.8

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"/>	<u>on file</u>
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 Name

10/19/23
Date/Time

000000



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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

MH03@2.5'
2310382-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGJ0829	10/20/23	10/23/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.0070	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.0	0.50		"	"	"	"	"	"	

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0443	111 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0595	149 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	140	50		mg/kg	1	BGJ0833	10/20/23	10/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.35	74.8 %		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 - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

MH03@2.5'
2310382-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0813	10/20/23	10/20/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.00999	0.00500	"	"	"	"	"	"	

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0279	83.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0283	84.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1004	10/25/23	10/27/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.99	0.200	mg/kg dry	1	BGJ1057	10/26/23	10/28/23	EPA 6020B	
Barium	152	0.400	"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

MH03@2.5'
2310382-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cadmium	0.259	0.200	mg/kg dry	1	BGJ1057	10/26/23	10/28/23	EPA 6020B	
Copper	4.74	0.400	"	"	"	"	"	"	
Lead	7.41	0.200	"	"	"	"	"	"	
Nickel	5.13	0.400	"	"	"	"	"	"	
Silver	0.0478	0.0200	"	"	"	"	"	"	
Zinc	16.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0997	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	88.6	0.0500	mg/L dry	1	BGJ0991	10/25/23	10/28/23	EPA 6020B	
Magnesium	25.7	0.0500	"	"	"	"	"	"	
Sodium	1.36	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0327	0.00100	units	1	BGJ1167	10/30/23	10/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.3		%	1	BGJ1075	10/26/23	10/26/23	Calculation	

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

MH03@2.5'
2310382-01 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.0706	0.0100		mmhos/cm	1	BGJ1040	10/26/23	10/26/23	EPA 120.1	

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

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	6.90			pH Units	1	BGJ1039	10/26/23	10/26/23	EPA 9045D	

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

MH03@2.5'
2310382-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-Methylnaphthalene	0.00781	0.00500	mg/kg	1	BGK0071	10/20/23	11/02/23	EPA 8270D SIM	I-02
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	I-02

Date Sampled: **10/19/23 08:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0259	77.7 %	40-150		"	"	"	"	I-02
Surrogate: Fluoranthene-d10	0.0148	44.4 %	40-150		"	"	"	"	I-02

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGJ0829 - EPA 5030 Soil MS

Blank (BGJ0829-BLK1)

Prepared: 10/20/23 Analyzed: 10/23/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0383		"	0.0400		95.7	50-150			
<i>Surrogate: Toluene-d8</i>	0.0399		"	0.0400		99.7	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0373		"	0.0400		93.2	50-150			

LCS (BGJ0829-BS1)

Prepared: 10/20/23 Analyzed: 10/23/23

Benzene	0.104	0.0020	mg/kg	0.100		104	70-130			
Toluene	0.102	0.0050	"	0.100		102	70-130			
Ethylbenzene	0.0968	0.0050	"	0.100		96.8	70-130			
m,p-Xylene	0.185	0.010	"	0.200		92.7	70-130			
o-Xylene	0.0914	0.0050	"	0.100		91.4	70-130			
1,2,4-Trimethylbenzene	0.0839	0.0050	"	0.100		83.9	70-130			
1,3,5-Trimethylbenzene	0.0900	0.0050	"	0.100		90.0	70-130			
Naphthalene	0.0856	0.0038	"	0.100		85.6	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0415		"	0.0400		104	50-150			
<i>Surrogate: Toluene-d8</i>	0.0401		"	0.0400		100	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0395		"	0.0400		98.8	50-150			

Matrix Spike (BGJ0829-MS1)

Source: 2310372-01

Prepared: 10/20/23 Analyzed: 10/23/23

Benzene	0.00627	0.0020	mg/kg	0.100	ND	6.27	70-130			QM-05
Toluene	0.0108	0.0050	"	0.100	ND	10.8	70-130			QM-05
Ethylbenzene	0.0536	0.0050	"	0.100	ND	53.6	70-130			QM-05
m,p-Xylene	0.0959	0.010	"	0.200	ND	48.0	70-130			QM-05
o-Xylene	0.0413	0.0050	"	0.100	ND	41.3	70-130			QM-05
1,2,4-Trimethylbenzene	0.0410	0.0050	"	0.100	ND	41.0	70-130			QM-05
1,3,5-Trimethylbenzene	0.0531	0.0050	"	0.100	ND	53.1	70-130			QM-05
Naphthalene	ND	0.0038	"	0.100	ND		70-130			QM-05
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0497		"	0.0400		124	50-150			
<i>Surrogate: Toluene-d8</i>	0.0385		"	0.0400		96.2	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0408		"	0.0400		102	50-150			

Summit Scientific

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

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

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

Batch BGJ0829 - EPA 5030 Soil MS

Matrix Spike Dup (BGJ0829-MSD1)	Source: 2310372-01			Prepared: 10/20/23 Analyzed: 10/23/23						
Benzene	ND	0.0020	mg/kg	0.100	ND	70-130	200	30		QM-05
Toluene	0.00780	0.0050	"	0.100	ND	7.80	70-130	32.5	30	QM-05
Ethylbenzene	0.0521	0.0050	"	0.100	ND	52.1	70-130	2.78	30	QM-05
m,p-Xylene	0.0932	0.010	"	0.200	ND	46.6	70-130	2.86	30	QM-05
o-Xylene	0.0394	0.0050	"	0.100	ND	39.4	70-130	4.53	30	QM-05
1,2,4-Trimethylbenzene	0.0393	0.0050	"	0.100	ND	39.3	70-130	4.26	30	QM-05
1,3,5-Trimethylbenzene	0.0510	0.0050	"	0.100	ND	51.0	70-130	4.09	30	QM-05
Naphthalene	ND	0.0038	"	0.100	ND	70-130			30	QM-05
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0503</i>		<i>"</i>	<i>0.0400</i>		<i>126</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0381</i>		<i>"</i>	<i>0.0400</i>		<i>95.2</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			

Summit Scientific

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6855 W. 119th Ave.
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Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGJ0833 - EPA 3550A

Blank (BGJ0833-BLK1)

Prepared: 10/20/23 Analyzed: 10/21/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	12.1		"	12.5		96.7	30-150				

LCS (BGJ0833-BS1)

Prepared: 10/20/23 Analyzed: 10/21/23

C10-C28 (DRO)	427	50	mg/kg	500		85.3	70-130				
Surrogate: <i>o</i> -Terphenyl	14.2		"	12.5		114	30-150				

Matrix Spike (BGJ0833-MS1)

Source: 2310372-01

Prepared: 10/20/23 Analyzed: 10/21/23

C10-C28 (DRO)	389	50	mg/kg	500	14.0	74.9	70-130				
Surrogate: <i>o</i> -Terphenyl	11.5		"	12.5		92.0	30-150				

Matrix Spike Dup (BGJ0833-MSD1)

Source: 2310372-01

Prepared: 10/20/23 Analyzed: 10/21/23

C10-C28 (DRO)	511	50	mg/kg	500	14.0	99.3	70-130	27.1	20		QR-02
Surrogate: <i>o</i> -Terphenyl	12.3		"	12.5		98.1	30-150				

Summit Scientific

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BGJ0813 - EPA 5030 Soil MS

Blank (BGJ0813-BLK1)

Prepared & Analyzed: 10/20/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0308</i>		"	<i>0.0333</i>		<i>92.4</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0340</i>		"	<i>0.0333</i>		<i>102</i>	<i>40-150</i>			

LCS (BGJ0813-BS1)

Prepared & Analyzed: 10/20/23

Acenaphthene	0.0237	0.00500	mg/kg	0.0333		71.1	31-137			
Anthracene	0.0314	0.00500	"	0.0333		94.3	30-120			
Benzo (a) anthracene	0.0304	0.00500	"	0.0333		91.1	30-120			
Benzo (a) pyrene	0.0286	0.00500	"	0.0333		85.7	30-120			
Benzo (b) fluoranthene	0.0294	0.00500	"	0.0333		88.2	30-120			
Benzo (k) fluoranthene	0.0298	0.00500	"	0.0333		89.3	30-120			
Chrysene	0.0306	0.00500	"	0.0333		91.7	30-120			
Dibenz (a,h) anthracene	0.0276	0.00500	"	0.0333		82.7	30-120			
Fluoranthene	0.0311	0.00500	"	0.0333		93.2	30-120			
Fluorene	0.0267	0.00500	"	0.0333		80.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0184	0.00500	"	0.0333		55.3	30-120			
Pyrene	0.0318	0.00500	"	0.0333		95.3	35-142			
1-Methylnaphthalene	0.0293	0.00500	"	0.0333		87.9	35-142			
2-Methylnaphthalene	0.0281	0.00500	"	0.0333		84.4	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0297</i>		"	<i>0.0333</i>		<i>89.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0318</i>		"	<i>0.0333</i>		<i>95.5</i>	<i>40-150</i>			

Summit Scientific

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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGJ0813 - EPA 5030 Soil MS

Matrix Spike (BGJ0813-MS1)	Source: 2310383-01			Prepared & Analyzed: 10/20/23						
Acenaphthene	0.0338	0.00500	mg/kg	0.0333	0.0131	62.2	31-137			
Anthracene	0.0867	0.00500	"	0.0333	0.0432	130	30-120			QM-02
Benzo (a) anthracene	0.0979	0.00500	"	0.0333	0.0720	77.9	30-120			
Benzo (a) pyrene	0.0762	0.00500	"	0.0333	0.0500	78.9	30-120			
Benzo (b) fluoranthene	0.0917	0.00500	"	0.0333	0.0691	67.9	30-120			
Benzo (k) fluoranthene	0.0533	0.00500	"	0.0333	0.0276	77.1	30-120			
Chrysene	0.100	0.00500	"	0.0333	0.0746	77.6	30-120			
Dibenz (a,h) anthracene	0.0227	0.00500	"	0.0333	ND	68.0	30-120			
Fluoranthene	0.217	0.00500	"	0.0333	0.187	92.4	30-120			
Fluorene	0.0412	0.00500	"	0.0333	0.0169	73.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0674	0.00500	"	0.0333	0.0362	93.6	30-120			
Pyrene	0.187	0.00500	"	0.0333	0.159	81.9	35-142			
1-Methylnaphthalene	0.0247	0.00500	"	0.0333	ND	74.0	15-130			
2-Methylnaphthalene	0.0254	0.00500	"	0.0333	ND	76.2	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0246</i>		"	<i>0.0333</i>		<i>73.7</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0273</i>		"	<i>0.0333</i>		<i>82.0</i>	<i>40-150</i>			

Matrix Spike Dup (BGJ0813-MSD1)	Source: 2310383-01			Prepared & Analyzed: 10/20/23						
Acenaphthene	0.0336	0.00500	mg/kg	0.0333	0.0131	61.5	31-137	0.716	30	
Anthracene	0.0772	0.00500	"	0.0333	0.0432	102	30-120	11.6	30	
Benzo (a) anthracene	0.120	0.00500	"	0.0333	0.0720	144	30-120	20.3	30	QM-02
Benzo (a) pyrene	0.0929	0.00500	"	0.0333	0.0500	129	30-120	19.7	30	QM-02
Benzo (b) fluoranthene	0.114	0.00500	"	0.0333	0.0691	134	30-120	21.6	30	QM-02
Benzo (k) fluoranthene	0.0610	0.00500	"	0.0333	0.0276	100	30-120	13.6	30	
Chrysene	0.123	0.00500	"	0.0333	0.0746	144	30-120	19.9	30	QM-02
Dibenz (a,h) anthracene	0.0234	0.00500	"	0.0333	ND	70.1	30-120	3.10	30	
Fluoranthene	0.273	0.00500	"	0.0333	0.187	258	30-120	22.6	30	QM-02
Fluorene	0.0409	0.00500	"	0.0333	0.0169	72.2	30-120	0.750	30	
Indeno (1,2,3-cd) pyrene	0.0789	0.00500	"	0.0333	0.0362	128	30-120	15.8	30	QM-02
Pyrene	0.230	0.00500	"	0.0333	0.159	213	35-142	21.0	30	QM-02
1-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.6	15-130	12.1	50	
2-Methylnaphthalene	0.0232	0.00500	"	0.0333	ND	69.5	15-130	9.15	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0215</i>		"	<i>0.0333</i>		<i>64.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0233</i>		"	<i>0.0333</i>		<i>70.0</i>	<i>40-150</i>			

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BGK0071 - EPA 5030 Soil MS

Blank (BGK0071-BLK1)

Prepared & Analyzed: 11/02/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0399</i>		"	<i>0.0333</i>		<i>120</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0364</i>		"	<i>0.0333</i>		<i>109</i>		<i>40-150</i>		

LCS (BGK0071-BS1)

Prepared & Analyzed: 11/02/23

Acenaphthene	0.0274	0.00500	mg/kg	0.0333		82.1		31-137		
Anthracene	0.0320	0.00500	"	0.0333		95.9		30-120		
Benzo (a) anthracene	0.0305	0.00500	"	0.0333		91.5		30-120		
Benzo (a) pyrene	0.0327	0.00500	"	0.0333		98.1		30-120		
Benzo (b) fluoranthene	0.0339	0.00500	"	0.0333		102		30-120		
Benzo (k) fluoranthene	0.0356	0.00500	"	0.0333		107		30-120		
Chrysene	0.0331	0.00500	"	0.0333		99.3		30-120		
Dibenz (a,h) anthracene	0.0271	0.00500	"	0.0333		81.3		30-120		
Fluoranthene	0.0333	0.00500	"	0.0333		99.9		30-120		
Fluorene	0.0288	0.00500	"	0.0333		86.4		30-120		
Indeno (1,2,3-cd) pyrene	0.0360	0.00500	"	0.0333		108		30-120		
Pyrene	0.0332	0.00500	"	0.0333		99.7		35-142		
1-Methylnaphthalene	0.0377	0.00500	"	0.0333		113		35-142		
2-Methylnaphthalene	0.0383	0.00500	"	0.0333		115		35-142		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0272</i>		"	<i>0.0333</i>		<i>81.5</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0317</i>		"	<i>0.0333</i>		<i>95.0</i>		<i>40-150</i>		

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BGK0071 - EPA 5030 Soil MS

Matrix Spike (BGK0071-MS1)	Source: 2311003-01			Prepared & Analyzed: 11/02/23						
Acenaphthene	0.0139	0.00500	mg/kg	0.0333	ND	41.7	31-137			
Anthracene	0.0166	0.00500	"	0.0333	ND	49.9	30-120			
Benzo (a) anthracene	0.0163	0.00500	"	0.0333	ND	49.0	30-120			
Benzo (a) pyrene	0.0159	0.00500	"	0.0333	ND	47.6	30-120			
Benzo (b) fluoranthene	0.0163	0.00500	"	0.0333	ND	48.8	30-120			
Benzo (k) fluoranthene	0.0170	0.00500	"	0.0333	ND	51.1	30-120			
Chrysene	0.0160	0.00500	"	0.0333	ND	48.1	30-120			
Dibenz (a,h) anthracene	0.0146	0.00500	"	0.0333	ND	43.8	30-120			
Fluoranthene	0.0166	0.00500	"	0.0333	ND	49.8	30-120			
Fluorene	0.0164	0.00500	"	0.0333	ND	49.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0168	0.00500	"	0.0333	ND	50.5	30-120			
Pyrene	0.0163	0.00500	"	0.0333	ND	49.0	35-142			
1-Methylnaphthalene	0.0185	0.00500	"	0.0333	ND	55.6	15-130			
2-Methylnaphthalene	0.0194	0.00500	"	0.0333	ND	58.3	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0140</i>		<i>"</i>	<i>0.0333</i>		<i>41.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0170</i>		<i>"</i>	<i>0.0333</i>		<i>50.9</i>	<i>40-150</i>			

Matrix Spike Dup (BGK0071-MSD1)	Source: 2311003-01			Prepared & Analyzed: 11/02/23						
Acenaphthene	0.0159	0.00500	mg/kg	0.0333	ND	47.8	31-137	13.5	30	
Anthracene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	11.2	30	
Benzo (a) anthracene	0.0189	0.00500	"	0.0333	ND	56.7	30-120	14.6	30	
Benzo (a) pyrene	0.0183	0.00500	"	0.0333	ND	54.9	30-120	14.3	30	
Benzo (b) fluoranthene	0.0185	0.00500	"	0.0333	ND	55.4	30-120	12.7	30	
Benzo (k) fluoranthene	0.0189	0.00500	"	0.0333	ND	56.7	30-120	10.5	30	
Chrysene	0.0178	0.00500	"	0.0333	ND	53.3	30-120	10.4	30	
Dibenz (a,h) anthracene	0.0150	0.00500	"	0.0333	ND	45.1	30-120	2.87	30	
Fluoranthene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	13.3	30	
Fluorene	0.0198	0.00500	"	0.0333	ND	59.3	30-120	18.9	30	
Indeno (1,2,3-cd) pyrene	0.0202	0.00500	"	0.0333	ND	60.6	30-120	18.2	30	
Pyrene	0.0190	0.00500	"	0.0333	ND	57.1	35-142	15.3	30	
1-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.2	15-130	19.0	50	
2-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.2	15-130	15.7	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0159</i>		<i>"</i>	<i>0.0333</i>		<i>47.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0196</i>		<i>"</i>	<i>0.0333</i>		<i>58.7</i>	<i>40-150</i>			

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

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

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

Batch BGJ1004 - EPA 3050B

Blank (BGJ1004-BLK1)

Prepared: 10/25/23 Analyzed: 10/27/23

Boron ND 2.00 mg/L

LCS (BGJ1004-BS1)

Prepared: 10/25/23 Analyzed: 10/27/23

Boron 4.55 2.00 mg/L 5.00 91.0 80-120

Duplicate (BGJ1004-DUP1)

Source: 2310112-02

Prepared: 10/25/23 Analyzed: 10/27/23

Boron 0.584 2.00 mg/L 0.613 4.81 20

Matrix Spike (BGJ1004-MS1)

Source: 2310112-02

Prepared: 10/25/23 Analyzed: 10/27/23

Boron 5.00 2.00 mg/L 5.00 0.613 87.7 75-125

Matrix Spike Dup (BGJ1004-MSD1)

Source: 2310112-02

Prepared: 10/25/23 Analyzed: 10/27/23

Boron 6.23 2.00 mg/L 5.00 0.613 112 75-125 22.0 25

Summit Scientific

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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGJ1057 - EPA 3050B

Blank (BGJ1057-BLK1)

Prepared: 10/26/23 Analyzed: 10/27/23

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

LCS (BGJ1057-BS1)

Prepared: 10/26/23 Analyzed: 10/27/23

Arsenic	48.0	0.200	mg/kg wet	40.0	120	80-120
Barium	37.5	0.400	"	40.0	93.9	80-120
Cadmium	1.89	0.200	"	2.00	94.6	80-120
Copper	46.9	0.400	"	40.0	117	80-120
Lead	17.4	0.200	"	20.0	87.2	80-120
Nickel	47.5	0.400	"	40.0	119	80-120
Silver	1.83	0.0200	"	2.00	91.3	80-120
Zinc	42.4	0.400	"	40.0	106	80-120
Selenium	4.23	0.260	"	4.00	106	80-120

Duplicate (BGJ1057-DUP1)

Source: 2310351-01

Prepared: 10/26/23 Analyzed: 10/27/23

Arsenic	0.989	0.200	mg/kg dry	1.07	7.81	20
Barium	48.4	0.400	"	46.4	4.13	20
Cadmium	0.161	0.200	"	0.140	14.0	20
Copper	2.30	0.400	"	2.34	1.49	20
Lead	4.30	0.200	"	3.78	12.7	20
Nickel	1.93	0.400	"	1.81	6.38	20
Silver	0.0173	0.0200	"	0.0135	24.7	20
Zinc	9.03	0.400	"	8.45	6.63	20
Selenium	ND	0.260	"	ND		20

QR-01

Summit Scientific

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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGJ1057 - EPA 3050B

Matrix Spike (BGJ1057-MS1)

Source: 2310351-01

Prepared: 10/26/23 Analyzed: 10/27/23

Arsenic	22.2	0.200	mg/kg dry	42.1	1.07	50.2	75-125				QM-07
Barium	96.7	0.400	"	42.1	46.4	119	75-125				
Cadmium	2.22	0.200	"	2.10	0.140	99.0	75-125				
Copper	22.9	0.400	"	42.1	2.34	48.8	75-125				QM-07
Lead	22.5	0.200	"	21.0	3.78	89.2	75-125				
Nickel	22.9	0.400	"	42.1	1.81	50.0	75-125				QM-07
Silver	2.01	0.0200	"	2.10	0.0135	94.9	75-125				
Zinc	30.3	0.400	"	42.1	8.45	52.0	75-125				QM-07
Selenium	6.65	0.260	"	4.21	ND	158	75-125				QM-07

Matrix Spike Dup (BGJ1057-MSD1)

Source: 2310351-01

Prepared: 10/26/23 Analyzed: 10/27/23

Arsenic	22.5	0.200	mg/kg dry	42.1	1.07	50.9	75-125	1.31	25		QM-07
Barium	83.7	0.400	"	42.1	46.4	88.4	75-125	14.5	25		
Cadmium	1.90	0.200	"	2.10	0.140	83.5	75-125	15.8	25		
Copper	23.2	0.400	"	42.1	2.34	49.6	75-125	1.55	25		QM-07
Lead	19.9	0.200	"	21.0	3.78	76.4	75-125	12.7	25		
Nickel	23.1	0.400	"	42.1	1.81	50.6	75-125	0.947	25		QM-07
Silver	1.74	0.0200	"	2.10	0.0135	81.8	75-125	14.7	25		
Zinc	29.7	0.400	"	42.1	8.45	50.5	75-125	2.08	25		QM-07
Selenium	6.95	0.260	"	4.21	ND	165	75-125	4.48	25		QM-07

Summit Scientific

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

Project: Noble - Alexander Federal H4-2JI
Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGJ0997 - 3060A Mod

Blank (BGJ0997-BLK1)

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGJ0997-BS1)

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent 25.0 0.30 mg/kg wet 25.0 99.8 80-120

Duplicate (BGJ0997-DUP1)

Source: 2310382-01

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGJ0997-MS1)

Source: 2310382-01

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent 28.3 0.30 mg/kg dry 29.0 ND 97.8 75-125

Matrix Spike Dup (BGJ0997-MSD1)

Source: 2310382-01

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent 28.3 0.30 mg/kg dry 29.0 ND 97.6 75-125 0.205 20

Summit Scientific

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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

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

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

Batch BGJ0991 - General Preparation

Blank (BGJ0991-BLK1)

Prepared: 10/25/23 Analyzed: 10/28/23

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

LCS (BGJ0991-BS1)

Prepared: 10/25/23 Analyzed: 10/28/23

Calcium	3.76	0.0500	mg/L wet	5.00	75.2	70-130
Magnesium	5.47	0.0500	"	5.00	109	70-130
Sodium	5.90	0.0500	"	5.00	118	70-130

Summit Scientific



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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

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

Summit Scientific

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

Batch BGJ1075 - General Preparation

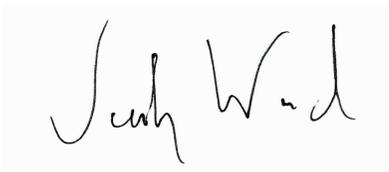
Duplicate (BGJ1075-DUP1)

Source: 2310112-02

Prepared & Analyzed: 10/26/23

% Solids	84.4	%		84.5		0.0776	20
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Summit Scientific



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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

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

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

Batch BGJ1040 - General Preparation

Blank (BGJ1040-BLK1)

Prepared & Analyzed: 10/26/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGJ1040-BS1)

Prepared & Analyzed: 10/26/23

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

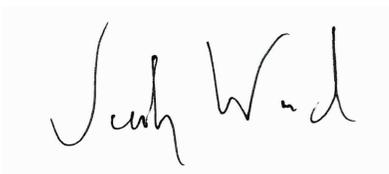
Duplicate (BGJ1040-DUP1)

Source: 2310382-01

Prepared & Analyzed: 10/26/23

Specific Conductance (EC) 0.0707 0.0100 mmhos/cm 0.0706 0.227 20

Summit Scientific



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

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

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

Summit Scientific

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

Batch BGJ1039 - General Preparation

LCS (BGJ1039-BS1)

Prepared & Analyzed: 10/26/23

pH 9.02 pH Units 9.18 98.3 95-105

Duplicate (BGJ1039-DUP1)

Source: 2310382-01

Prepared & Analyzed: 10/26/23

pH 6.90 pH Units 6.90 0.00 20

Summit Scientific



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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Alexander Federal H4-2JI

Project Number: UWRWE-A3231-ABN
Project Manager: Jacob Whritenour

Reported:
11/06/23 12:40

Notes and Definitions

- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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.
- 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.
- QM-02 The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
- I-02 This sample was analyzed outside of the recommended holding time.
- 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