



TANK BATTERY DECOMMISSIONING FORM

SITE NAME: HSR-Kinzer 4-23 facility							DATE: 3/5/2024	REM. PROJECT #: 33227	WEATHER: Sunny 50s		
SITE DIRECTIONS: CR54/SR21; E on 54 (0.427mi); N on access road (0.50mi)							CLIENT: Noble				
LEGALS AND LAT/LONG: 40.3854366 -104.8605729							TASMAN PERSONNEL: Molly Parka				
SOIL TYPES: SM/SC							SURFACE GRADIENT: Southeast				
SOIL SAMPLING							FACILITY INFRASTRUCTURE				
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT		Quantity		
							Above Ground Storage Tank (AST)		2		
3/5/2024 10:57	AST01@0.5'	0.8	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel		2		
3/5/2024 10:59	AST02@0.5'	0.7	No Staining	No Odor	Yes	Lab	Separator		1		
3/5/2024 09:19	MH01@0.5'	1.0	No Staining	No Odor	Yes	Grab	Emission Control Device (ECD)				
3/5/2024 09:29	FLARE01@0.5'	2.0	No Staining	No Odor	Yes	Grab	Dump Line		1		
3/5/2024 09:26	FLARE02@0.5'	1.9	No Staining	No Odor	Yes	Grab	Wellhead				
3/5/2024 11:56	SEP01-FL1@3'	0.8	No Staining	No Odor	Yes	Lab	Flowline		3		
3/5/2024 12:01	SEP01-FL2@3'	0.6	No Staining	No Odor	Yes	Lab	Other:				
3/5/2024 09:47	SEP01-DL@3'	0.4	No Staining	No Odor	Yes	Lab	Soil Loads Removed				
3/5/2024 11:05	SS01@3'	0.9	No Staining	No Odor	Yes	On-hold	IMPACTED SOIL IDENTIFIED?				
3/5/2024 11:10	SS02@3'	0.6	No Staining	No Odor	Yes	On-hold	ESTIMATED VOLUME OF IMPACTS:				
3/5/2024 11:13	SS03@3'	7.6	No Staining	Slight HC Odor	Yes	Lab	Date	Number	CY		
3/5/2024 11:16	SS04@3'	2.8	No Staining	No Odor	Yes	On-hold					
3/5/2024 10:32	SS05@3'	3.6	No Staining	Organic Odor	Yes	Lab					
3/5/2024 10:35	SS06@3'	1.1	No Staining	No Odor	Yes	On-hold					
3/5/2024 10:40	SS07@3'	1.7	No Staining	No Odor	Yes	On-hold					
3/5/2024 10:42	SS08@3'	0.7	No Staining	No Odor	Yes	On-hold	Total Removed		0	0	
3/5/2024 11:19	FS01@4'	0.6	No Staining	No Odor	Yes	Lab	Disposal Facility:				
3/5/2024 10:44	FS02@4'	0.9	No Staining	No Odor	Yes	Lab	Groundwater Recovery				
3/5/2024 11:34	BKG01@3'	0.9	No Staining	No Odor	Yes	Lab	DATE GW ENCOUNTERED:			DEPTH:	
3/5/2024 11:37	BKG02@4'	0.6	No Staining	No Odor	Yes	Lab	GROUNDWATER IN CONTACT WITH IMPACTED SOIL?				
3/5/2024 12:19	BKG03@0.5'	0.9	No Staining	No Odor	Yes	Lab					
							LNAPL OR SHEEN OBSERVED ON GW?				
GROUNDWATER SAMPLING							Date		BBLs		
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?					
							Total Removed		0		
							Disposal Facility:				

Photographic Log



Equipment ID:			Equipment Type:			Equipment ID:			Equipment Type:		
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions: Site photo facing south					

Photographic Log



Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: Site photo facing east			

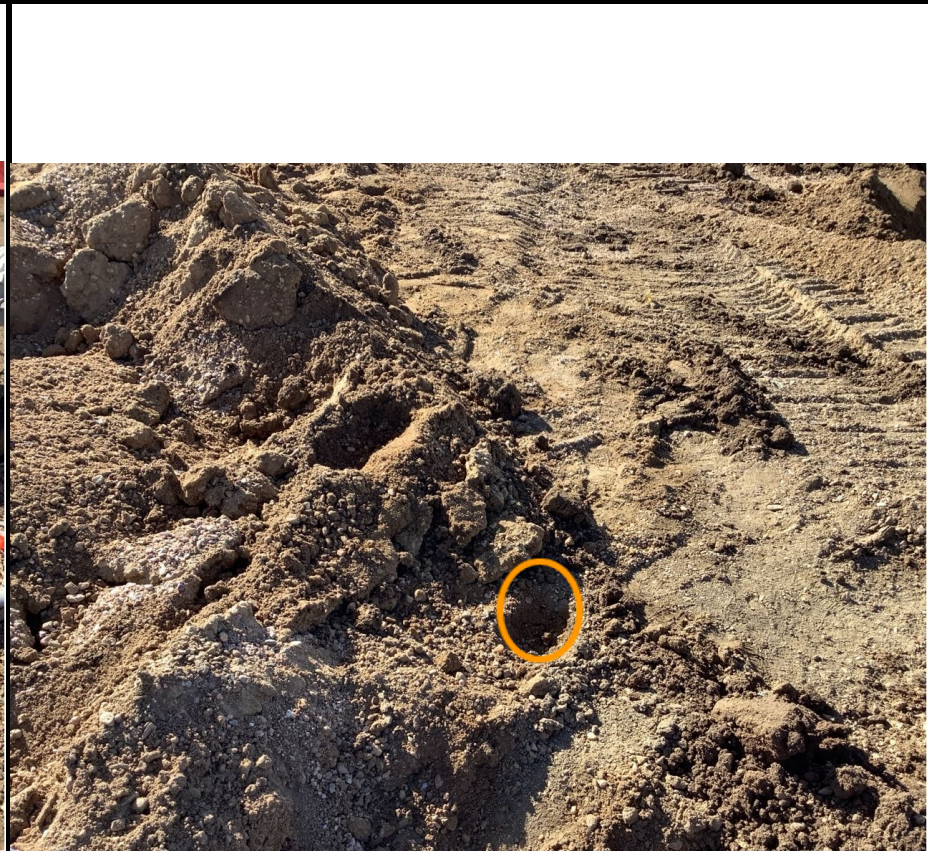
Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: Site photo facing west			

Photographic Log



Equipment ID: AST01@0.5'		Equipment Type: Above Ground Storage Tank		Equipment ID: AST02@0.5'		Equipment Type: Above Ground Storage Tank	
Material: Steel	Volume:	Contents: Crude Oil		Material: Steel	Volume:	Contents: Oil/Gas/Water	
Notes/Conditions:				Notes/Conditions:			

Photographic Log



Equipment ID: MH01@0.5'		Equipment Type: Meter House	
Material:	Volume:	Contents:	
Notes/Conditions: Field screen only			

Equipment ID: FLARE01@0.5'		Equipment Type: Flare	
Material:	Volume:	Contents:	
Notes/Conditions: Field screen only			



Photographic Log

					
Equipment ID: FLARE02@0.5'		Equipment Type: Flare	Equipment ID: SEP01-FL1@3'		Equipment Type: Separator
Material:	Volume:	Contents:	Material: Steel	Volume:	Contents: Oil/Gas/Water
Notes/Conditions: Field screen only			Notes/Conditions: Associated with Kinzer 4-23 flowline Sampling taken with a backhoe		



Photographic Log

					
Equipment ID: SEP01-FL2@	Equipment Type: Flowline		Equipment ID: SEP03	Equipment Type:	
Material: Steel	Volume:	Contents: Oil/Gas/Water	Material:	Volume:	Contents:
Notes/Conditions: Associated with Kinzer 6-23 flowline Sample take with a backhoe			Notes/Conditions: Associated with Kinzer 18-23 flowline was not removed today and will stay in tack until we get the form27 for it.		

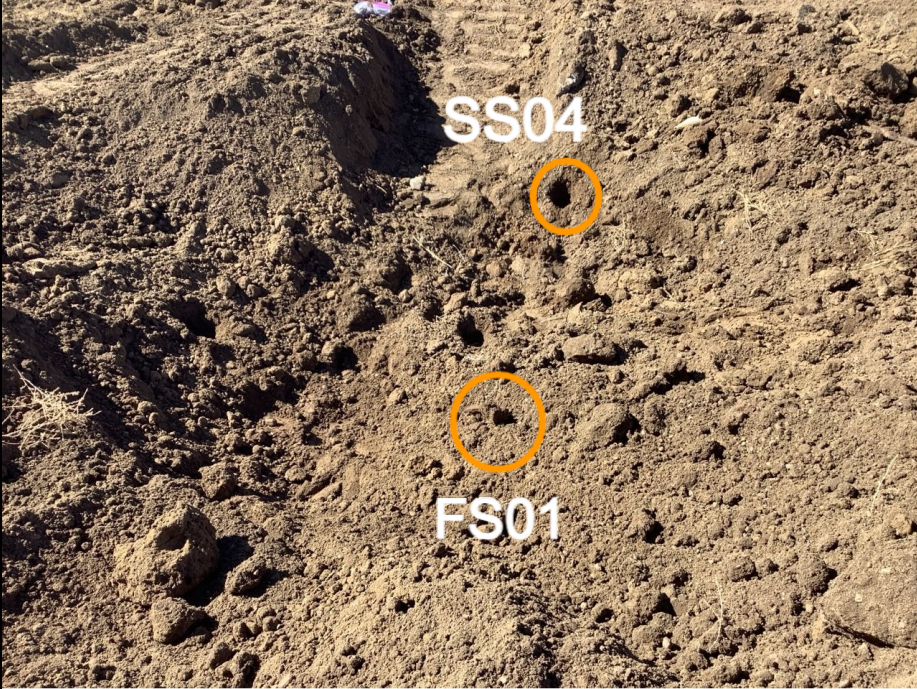

Photographic Log

					
Equipment ID: SEP01-DL@3'	Equipment Type: Separator		Equipment ID: SS01@3'	Equipment Type: Partially Buried Vault	
Material: Steel	Volume:	Contents: Oil/Gas/Water	Material: Concrete	Volume:	Contents: Produced Water
Notes/Conditions: All 3 flowlines went into one separator			Notes/Conditions: Facing north. Vault located on the north side of the AST SS01@3' SS04@3' FS01@4'		



Photographic Log

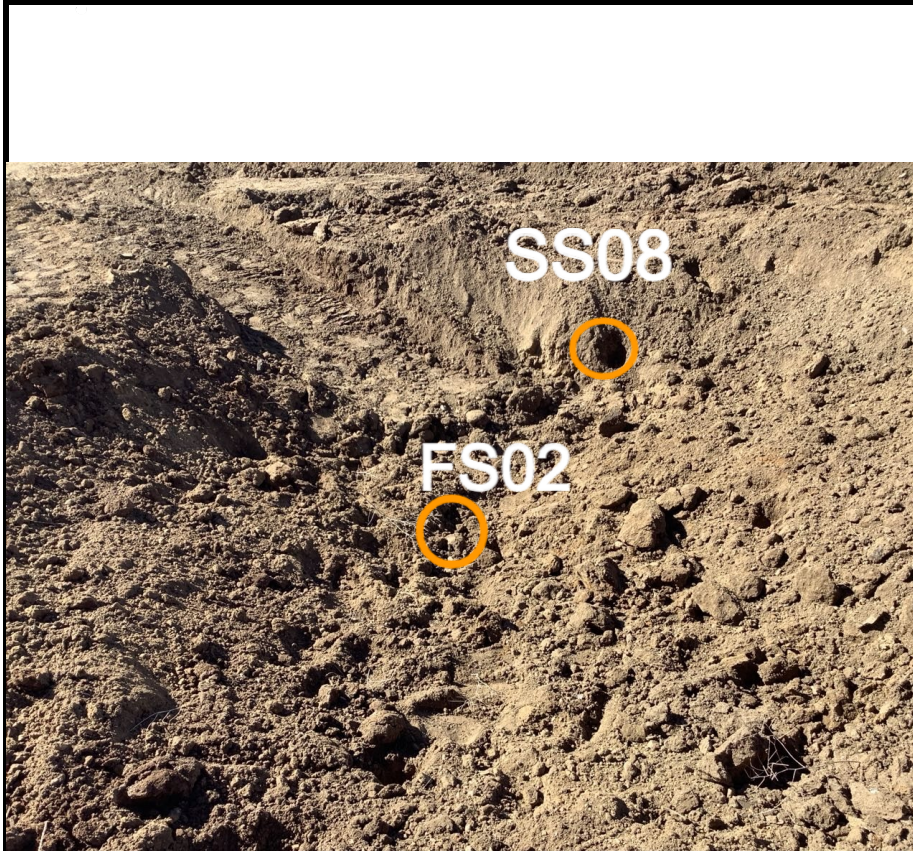
					
Equipment ID: SS02@3'	Equipment Type: Partially Buried Vault		Equipment ID: SS03@3'	Equipment Type: Partially Buried Vault	
Material: Concrete	Volume:	Contents: Produced Water	Material: Concrete	Volume:	Contents: Produced Water
Notes/Conditions: Facing east Vault located on the north side of the AST			Notes/Conditions: Facing south Vault located on the north side of the AST Sample had a slight HC odor but had no signs of staining or odor		

Photographic Log

					
Equipment ID: SS04@3'	Equipment Type: Partially Buried Vault		Equipment ID: SS05@3'	Equipment Type: Partially Buried Vault	
Material: Concrete	Volume:	Contents: Produced Water	Material: Concrete	Volume:	Contents: Produced Water
Notes/Conditions: Facing west Vault located on the north side of the AST			Notes/Conditions: Facing north Vault located on the south side of the AST		

Photographic Log

					
Equipment ID: SS06@3'	Equipment Type: Partially Buried Vault		Equipment ID: SS07@3'	Equipment Type: Partially Buried Vault	
Material: Concrete	Volume:	Contents: Produced Water	Material: Concrete	Volume:	Contents: Produced Water
Notes/Conditions: Facing east Vault located on the south side of the AST SS06@3' FS02@4'			Notes/Conditions: Facing south Vault located on the south side of the AST		

Photographic Log


Equipment ID: SS08@3'	Equipment Type: Partially Buried Vault	
Material: Concrete	Volume:	Contents: Produced Water
Notes/Conditions: Facing west Vault located on the south side of the AST SS08@3' FS02@4'		

Equipment ID: BKG01,02,03	Equipment Type:	
Material:	Volume:	Contents:
Notes/Conditions: Background sample taken east of the facility pad All background samples were taken from the same location at different depths BKG01@3' BKG02@4' and BKG03@0.5'		

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. (100322) - HSR KINZER 4-23

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
AST01@0.5'	03/05/24	0.8	No Staining	No Odor	Lab	40.385332	-104.860539	0.8
AST02@0.5'	03/05/24	0.7	No Staining	No Odor	Lab	40.385284	-104.860534	0.8
MH01@0.5'	03/05/24	1.0	No Staining	No Odor	Grab	40.385591	-104.860620	0.8
FLARE01@0.5'	03/05/24	2.0	No Staining	No Odor	Grab	40.385604	-104.860516	0.9
FLARE02@0.5'	03/05/24	1.9	No Staining	No Odor	Lab	40.385570	-104.860503	0.8
FS01@4'	03/05/24	0.6	No Staining	No Odor	Lab	40.385361	-104.860516	0.8
FS02@4'	03/05/24	0.9	No Staining	No Odor	Lab	40.385251	-104.860504	0.9
SEP01-DL@3'	03/05/24	0.4	No Staining	No Odor	Lab	40.385658	-104.860554	0.8
SEP01-FL1@3'	03/05/24	0.8	No Staining	No Odor	Lab	40.385661	-104.860504	0.8
SEP01-FL2@3'	03/05/24	0.6	No Staining	No Odor	Lab	40.385661	-104.860505	0.8
SS01@3'	03/05/24	0.9	No Staining	No Odor	Grab	40.385376	-104.860515	0.9
SS02@3'	03/05/24	0.6	No Staining	No Odor	Grab	40.385359	-104.860490	0.9
SS03@3'	03/05/24	7.6	No Staining	Slight HC Odor	Lab	40.385346	-104.860513	0.8
SS04@3'	03/05/24	2.8	No Staining	No Odor	Grab	40.385355	-104.860535	0.9
SS05@3'	03/05/24	3.6	No Staining	Organic Odor	Lab	40.385263	-104.860517	1.0
SS06@3'	03/05/24	1.1	No Staining	No Odor	Grab	40.385250	-104.860486	0.8
SS07@3'	03/05/24	1.7	No Staining	No Odor	Grab	40.385235	-104.860511	0.9
SS08@3'	03/05/24	0.7	No Staining	No Odor	Grab	40.385249	-104.860535	0.8
BKG01@3'	03/05/24	0.9	No Staining	No Odor	Lab	40.385378	-104.860328	NC
BKG02@4'	03/05/24	0.6	No Staining	No Odor	Lab	40.385378	-104.860328	NC
BKG03@0.5'	03/05/24	0.9	No Staining	No Odor	Lab	40.385378	-104.860328	NC

Notes:

PID = Photoionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

NC = Not Collected

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

TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. (100322) - HSR KINZER 4-23

Soil Sample ID	Date	¹ Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ^{1,2}		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^{1,2,3}		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
AST01@0.5'	03/05/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST02@0.5'	03/05/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@4'	03/05/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS02@4'	03/05/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-DL@3'	03/05/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-FL1@3'	03/05/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-FL2@3'	03/05/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS03@3'	03/05/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS05@3'	03/05/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
SSR ^{1,2}		6 - 8.3	<6	<4mmhos/cm	2
AST01@0.5'	03/05/24	8.36	0.205	0.260	<2.00
AST02@0.5'	03/05/24	8.38	0.190	0.203	<2.00
FS01@4'	03/05/24	8.18	0.0429	0.196	<2.00
FS02@4'	03/05/24	8.47	0.189	0.221	<2.00
SEP01-DL@3'	03/05/24	8.28	0.0468	0.168	<2.00
SEP01-FL1@3'	03/05/24	8.51	0.0580	0.143	<2.00
SEP01-FL2@3'	03/05/24	8.55	0.108	0.152	<2.00
SS03@3'	03/05/24	8.46	0.0893	0.187	<2.00
SS05@3'	03/05/24	8.27	0.307	0.421	<2.00
BKG01@0.5'	03/05/24	7.18	NA	NA	NA
BKG01@3'	03/05/24	7.19	NA	NA	NA
BKG01@4'	03/05/24	8.58	NA	NA	NA
Highest Background		8.58	-	-	-

Soil Sample ID	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ^{1,2}		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^{1,2,3}		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
AST01@0.5'	03/05/24	2.63	86.6	0.235	<0.30	11.8	25.2	4.92	<0.260	0.0507	28.4
AST02@0.5'	03/05/24	2.94	96.5	0.243	<0.30	8.75	19.9	5.48	<0.260	0.0644	35.0
FS01@4'	03/05/24	3.50	96.1	0.255	<0.30	7.94	15.8	6.18	<0.260	0.0572	26.3
FS02@4'	03/05/24	2.45	77.2	0.235	<0.30	9.19	24.4	5.24	<0.260	0.0492	30.3
SEP01-DL@3'	03/05/24	4.71	111	0.313	<0.30	6.55	11.0	6.85	<0.260	0.0493	27.4
SEP01-FL1@3'	03/05/24	4.82	121	0.354	<0.30	7.14	10.0	7.92	<0.260	0.0592	26.7
SEP01-FL2@3'	03/05/24	4.48	117	0.365	<0.30	6.83	9.65	7.52	<0.260	0.0565	33.4
SS03@3'	03/05/24	3.72	98.7	0.292	<0.30	9.83	27.2	5.88	<0.260	0.0618	33.6
SS05@3'	03/05/24	2.74	106	0.298	<0.30	9.35	24.2	4.90	<0.260	0.0606	30.2
BKG01@0.5'	03/05/24	4.13	132	0.386	<0.30	7.03	13.0	7.48	<0.260	0.0528	26.3
BKG01@3'	03/05/24	8.42	136	0.385	<0.30	7.73	14.4	10.3	0.291	0.133	29.9
BKG01@4'	03/05/24	6.33	148	0.433	<0.30	7.60	11.6	9.40	<0.260	0.0787	27.5
Mean Background Concentration		6.29	139	-	-	-	13.0	-	-	-	-
Mean Background x1.25		7.87	173	-	-	-	16.3	-	-	-	-
Highest Background		8.42	148	-	-	-	14.4	-	-	-	-
Highest Background x1.25		10.5	185	-	-	-	18.0	-	-	-	-

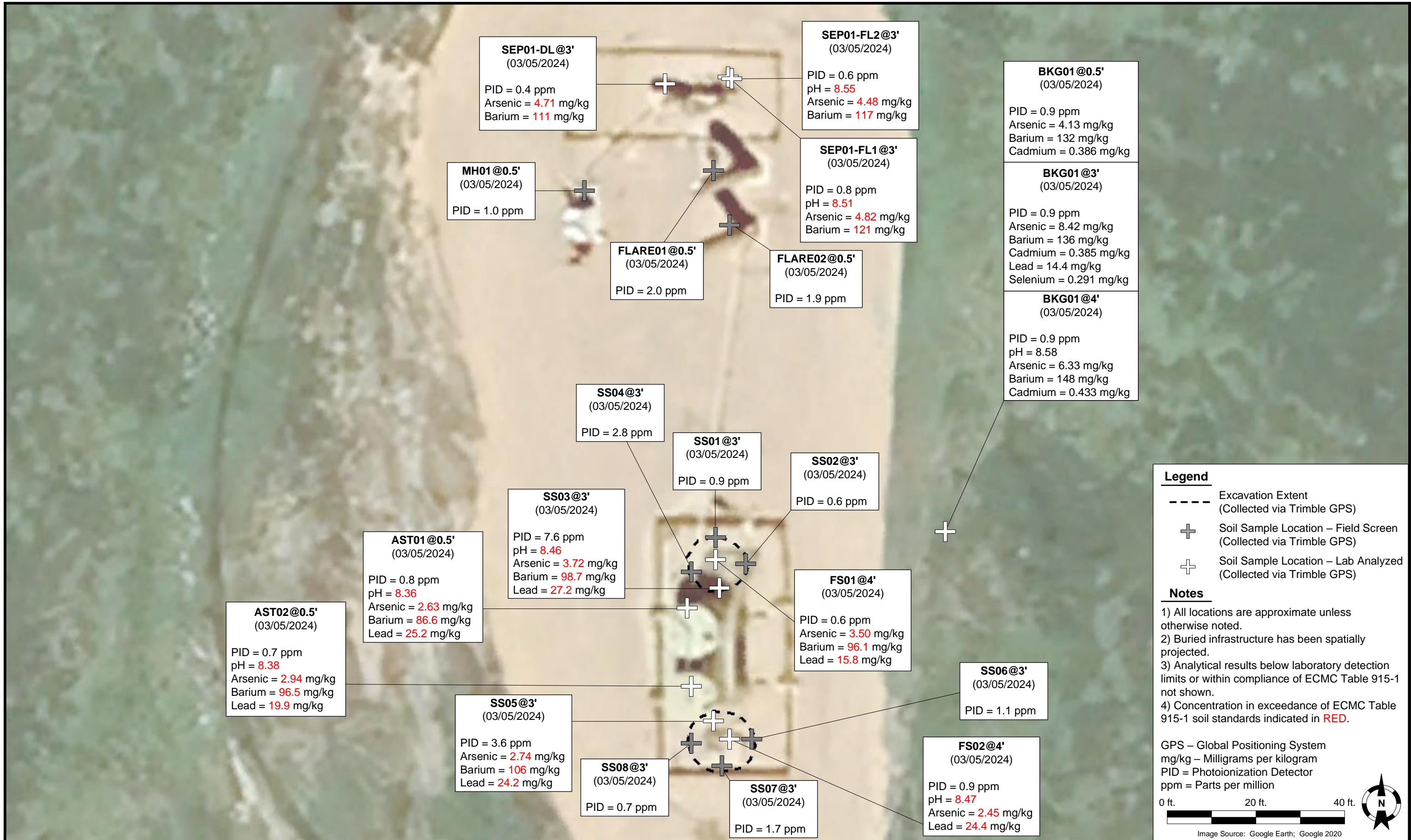
Notes:

- Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) and Soil Suitability for Reclamation (SSR) standards referenced 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
Highlighted results are equal to or exceed the ECMC Table 915-1 standard

1,2,4 - TMB = 1,2,4 Trimethylbenzene
 1,3,5 - TMB = 1,3,5 Trimethylbenzene
 Benz(a) = Benzo(a)anthracene
 Benzo(b) = Benzo(b)fluoranthene
 Benzo(k) = Benzo(k)fluoranthene
 Benzo(a) = Benzo(a)pyrene
 A,H = Dibenzo(a,h)anthracene
 1,2,3-CD = Indeno(1,2,3-cd)pyrene
 1-M = 1-methylnaphthalene
 2-M = 2-methylnaphthalene
 NA = Not analyzed



Legend

- Excavation Extent (Collected via Trimble GPS)
- + Soil Sample Location – Field Screen (Collected via Trimble GPS)
- + Soil Sample Location – Lab Analyzed (Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.
- 3) Analytical results below laboratory detection limits or within compliance of ECMC Table 915-1 not shown.
- 4) Concentration in exceedance of ECMC Table 915-1 soil standards indicated in **RED**.

GPS – Global Positioning System
mg/kg – Milligrams per kilogram
PID = Photoionization Detector
ppm = Parts per million

0 ft. 20 ft. 40 ft.

Image Source: Google Earth; Google 2020

DATE: 04/04/2024

DESIGNED BY: JW

DRAWN BY: KM

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

Noble Energy, Inc. (100322) – DJ Basin
HSR Kinzer 4-23
SENW, Section 23, Township 5 North, Range 67 West
Weld County, Colorado

Tank Battery Closure & Soil
Analytical Results Map
(03/05/2024)

FIGURE
1

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 08, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

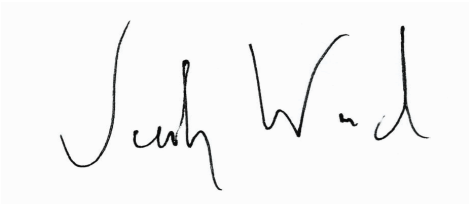
Broomfield, CO 80020

RE: Noble - HSR Kinzer 4-23

Work Order #2403079

Enclosed are the results of analyses for samples received by Summit Scientific on 03/05/24 17:53. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a long, sweeping underline.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

ANALYTICAL REPORT FOR SAMPLES


Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0.5'	2403079-01	Soil	03/05/24 10:57	03/05/24 17:53
AST02@0.5'	2403079-02	Soil	03/05/24 10:59	03/05/24 17:53
SEP01-FL1@3'	2403079-03	Soil	03/05/24 11:56	03/05/24 17:53
SEP01-FL2@3'	2403079-04	Soil	03/05/24 12:01	03/05/24 17:53
SEP01-DL@3'	2403079-05	Soil	03/05/24 09:47	03/05/24 17:53
SS03@3'	2403079-08	Soil	03/05/24 11:13	03/05/24 17:53
SS05@3'	2403079-10	Soil	03/05/24 10:32	03/05/24 17:53
FS01@4'	2403079-14	Soil	03/05/24 11:19	03/05/24 17:53
FS02@4'	2403079-15	Soil	03/05/24 10:44	03/05/24 17:53
BKG01@3'	2403079-16	Soil	03/05/24 11:34	03/05/24 17:53
BKG01@4'	2403079-17	Soil	03/05/24 11:37	03/05/24 17:53
BKG01@0.5'	2403079-18	Soil	03/05/24 12:19	03/05/24 17:53

Case Narrative

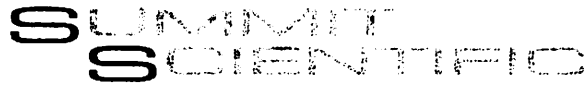
Hunter Merlo requested pH be added to BKG01@3', BKG01@4', & BKG01@0.5' on 4/3/2024.
This report includes those results.

This is a revision of the report originally sent on 4/3/2024 at 11:55 AM MT.

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.



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

Lab ID Page 1 of 2
24030791-1

		Send Data To:	Send Invoice To:
Client: Noble/Tasman		Project Manager: Jake Whritenour	Company: <i>Noble</i>
Address: 6855 W. 119th Ave.		E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location:
City/State/Zip: Broomfield/CO/ 80020		Project Name: <i>HSR-Kinzer 4-23</i>	AFE#: <i>UWLWE-A2548-A13N</i>
Phone: 937-554-5108		Project Name: HSR-Kinzer-65 N6FWZ35E70	PO/Billing Codes:
Sampler Name: Molly Parks		Project Number: <i>33227</i>	Contact: <i>Miguel Barron</i>

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instruction	
					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'	3-5-24	1057	3			X			X				X	X	X	X	X	X		
2	AST02@0.5'		1059	3			X			X				X	X	X	X	X	X		
3	SEP01-FL1@3'		1156	3			X			X				X	X	X	X	X	X		
4	SEP02-FL2@3'		1201	3			X			X				X	X	X	X	X	X		
5	SEP02-DL@3'		947	3			X			X				X	X	X	X	X	X		
6	SS01@3'		1105	3			X			X											X
7	SS02@3'		1110	3			X			X											X
8	SS03@3'		1113	3			X			X			X	X	X	X	X	X	X		
9	SS04@3'		1116	3			X			X											X
10	SS05@3'		1032	3			X			X			X	X	X	X	X	X	X		
11	SS06@3'		1035	3			X			X											X
12	SS07@3'		1040	3			X			X											X
13	SS08@3'		1042	3			X			X											X
14																					
15																					

Relinquished by: <i>MP</i>	Date/Time: <i>3-5-24 11419</i>	Received by: <i>Tasman Lock Box</i>	Date/Time: <i>3-5-24 11419</i>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
1 Day	Field ORP					
2 Days	Field pH					
3 Days	Field Temp.					
Standard	X	Field Turb.				
Temperature Upon Receipt: <i>8.8</i>	Corrected Temperature: <i>8</i>	IR gun #: <i>1</i>	HNO3 lot #:			

Send Data To:		Send Invoice To:	
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Noble	
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location:	
City/State/Zip: Broomfield/CO/ 80020	Project Name: HSR-Kinzer 4-23	AFE#: UWRWE-A2518-A13N	
Phone: 937-554-5108	Project Name: HSR-Kinzer-6SN67WC3SENUWMP	PO/Billing Codes:	
Sampler Name: Molly Parks	Project Number: 3227	Contact: Miguel Barron	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Other	Analysis Requested							Special Instruction		
					HCl	HNO3	None	Other	Water	Soil			Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD			
1	FS01@4'	3-5-24	1119	3			X			X			X	X	X	X	X	X				
2	FS02@4'	3-5-24	1044	3			X			X			X	X	X	X	X	X				
3	13KG01@3'	3-5-24	1134	2			X			X			X	X	X	X	X	X				
4	13KG02@4'	3-5-24	1137	2			X			X			X	X	X	X	X	X				
5	13KG03@0.5'	3-5-24	1219	2			X			X			X	X	X	X	X	X				
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by: <u>MP</u>	Date/Time: <u>3-5-24/1419</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>3-5-24/1419</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>3-5-24/1753</u>	Received by: <u>RK</u>	Date/Time: <u>3-5-24/1753</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>8.8</u>	Corrected Temperature: <u>8</u>	IR gun #: <u>1</u>	HNO3 lot #:			

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2403079

Client: Noble Tasman Client Project ID: HR-Kinzer 4-23

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

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) 8.8 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"/>	ON ICE
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? (1)	<input 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

3/5/24
Date/Time



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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

AST01@0.5'
2403079-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHC0147	03/06/24	03/07/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0338	84.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0444	111 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0429	107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHC0149	03/06/24	03/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	6.11	48.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

AST01@0.5'
2403079-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0175	03/07/24	03/07/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0170	50.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0225	67.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0456	03/15/24	03/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/05/24 10:57**

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 - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

AST01@0.5'
2403079-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.63	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B
Barium	86.6	0.400	"	"	"	"	"	"
Cadmium	0.235	0.200	"	"	"	"	"	"
Copper	11.8	0.400	"	"	"	"	"	"
Lead	25.2	0.200	"	"	"	"	"	"
Nickel	4.92	0.400	"	"	"	"	"	"
Silver	0.0507	0.0200	"	"	"	"	"	"
Zinc	28.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	32.9	0.0500	mg/L dry	1	BHC0697	03/19/24	04/02/24	EPA 6020B	
Magnesium	5.20	0.0500	"	"	"	"	"	"	
Sodium	4.80	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.205	0.00100	units	1	BHD0074	04/03/24	04/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 10:57**

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

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07/08/24 15:26

AST01@0.5'
2403079-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	89.2	%	1	BHC0422	03/15/24	03/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.260	0.0100	mmhos/cm	1	BHC0698	03/19/24	03/20/24	EPA 120.1	

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

Date Sampled: **03/05/24 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.36		pH Units	1	BHC0699	03/19/24	03/20/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

AST02@0.5'
2403079-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHC0147	03/06/24	03/07/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0368	92.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0442	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0451	113 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0149	03/06/24	03/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.79	54.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

AST02@0.5'
2403079-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0175	03/07/24	03/07/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0199	59.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0245	73.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0456	03/15/24	03/29/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/05/24 10:59**

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

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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

AST02@0.5'
2403079-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.94	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B
Barium	96.5	0.400	"	"	"	"	"	"
Cadmium	0.243	0.200	"	"	"	"	"	"
Copper	8.75	0.400	"	"	"	"	"	"
Lead	19.9	0.200	"	"	"	"	"	"
Nickel	5.48	0.400	"	"	"	"	"	"
Silver	0.0644	0.0200	"	"	"	"	"	"
Zinc	35.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	33.5	0.0500	mg/L dry	1	BHC0697	03/19/24	04/02/24	EPA 6020B	
Magnesium	4.85	0.0500	"	"	"	"	"	"	
Sodium	4.44	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.190	0.00100	units	1	BHD0074	04/03/24	04/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 10:59**

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 - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

AST02@0.5'
2403079-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	93.8	%	1	BHC0422	03/15/24	03/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.203	0.0100	mmhos/cm	1	BHC0698	03/19/24	03/20/24	EPA 120.1	

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

Date Sampled: **03/05/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.38		pH Units	1	BHC0699	03/19/24	03/20/24	EPA 9045D	

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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-FL1@3'
2403079-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHC0147	03/06/24	03/07/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0363	90.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0451	113 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0448	112 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHC0149	03/06/24	03/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.71	69.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-FL1@3'
2403079-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0175	03/07/24	03/07/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0196	58.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0243	73.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0456	03/15/24	03/29/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-FL1@3'
2403079-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.82	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B	
Barium	121	0.400	"	"	"	"	"	"	
Cadmium	0.354	0.200	"	"	"	"	"	"	
Copper	7.14	0.400	"	"	"	"	"	"	
Lead	10.0	0.200	"	"	"	"	"	"	
Nickel	7.92	0.400	"	"	"	"	"	"	
Silver	0.0592	0.0200	"	"	"	"	"	"	
Zinc	26.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	56.6	0.0500	mg/L dry	1	BHC0697	03/19/24	04/02/24	EPA 6020B	
Magnesium	8.96	0.0500	"	"	"	"	"	"	
Sodium	1.78	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0580	0.00100	units	1	BHD0074	04/03/24	04/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 11:56**

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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-FL1@3'
2403079-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.4	%	1	BHC0422	03/15/24	03/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.143	0.0100	mmhos/cm	1	BHC0698	03/19/24	03/20/24	EPA 120.1	

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

Date Sampled: **03/05/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.51		pH Units	1	BHC0699	03/19/24	03/20/24	EPA 9045D	

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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-FL2@3'
2403079-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHC0147	03/06/24	03/07/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0350	87.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0429	107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0455	114 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHC0149	03/06/24	03/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.11	64.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-FL2@3'
2403079-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0175	03/07/24	03/07/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0223	66.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0261	78.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0456	03/15/24	03/29/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-FL2@3'
2403079-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	4.48	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B
Barium	117	0.400	"	"	"	"	"	"
Cadmium	0.365	0.200	"	"	"	"	"	"
Copper	6.83	0.400	"	"	"	"	"	"
Lead	9.65	0.200	"	"	"	"	"	"
Nickel	7.52	0.400	"	"	"	"	"	"
Silver	0.0565	0.0200	"	"	"	"	"	"
Zinc	33.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	33.3	0.0500	mg/L dry	1	BHC0697	03/19/24	04/02/24	EPA 6020B	
Magnesium	7.13	0.0500	"	"	"	"	"	"	
Sodium	2.64	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.108	0.00100	units	1	BHD0074	04/03/24	04/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-FL2@3'
2403079-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.3	%	1	BHC0422	03/15/24	03/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.152	0.0100	mmhos/cm	1	BHC0698	03/19/24	03/20/24	EPA 120.1	

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

Date Sampled: **03/05/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.55		pH Units	1	BHC0699	03/19/24	03/20/24	EPA 9045D	

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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-DL@3'
2403079-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHC0147	03/06/24	03/07/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0368	92.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0441	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0465	116 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0149	03/06/24	03/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.56	60.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-DL@3'
2403079-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0175	03/07/24	03/07/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0190	57.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0243	72.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0456	03/15/24	03/29/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/05/24 09:47**

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 - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-DL@3'
2403079-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	4.71	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B
Barium	111	0.400	"	"	"	"	"	"
Cadmium	0.313	0.200	"	"	"	"	"	"
Copper	6.55	0.400	"	"	"	"	"	"
Lead	11.0	0.200	"	"	"	"	"	"
Nickel	6.85	0.400	"	"	"	"	"	"
Silver	0.0493	0.0200	"	"	"	"	"	"
Zinc	27.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	44.8	0.0500	mg/L dry	1	BHC0697	03/19/24	04/02/24	EPA 6020B	
Magnesium	10.0	0.0500	"	"	"	"	"	"	
Sodium	1.33	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0468	0.00100	units	1	BHD0074	04/03/24	04/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 09:47**

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 - HSR Kinzer 4-23
Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SEP01-DL@3'
2403079-05 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.9	%	1	BHC0422	03/15/24	03/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.168	0.0100	mmhos/cm	1	BHC0698	03/19/24	03/20/24	EPA 120.1	

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

Date Sampled: **03/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.28		pH Units	1	BHC0699	03/19/24	03/20/24	EPA 9045D	

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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SS03@3'
2403079-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHC0147	03/06/24	03/07/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0360	90.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0443	111 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0452	113 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHC0149	03/06/24	03/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	5.00	40.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SS03@3'
2403079-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0175	03/07/24	03/07/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0198	59.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0266	79.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0456	03/15/24	03/29/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/05/24 11:13**

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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SS03@3'
2403079-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.72	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B	
Barium	98.7	0.400	"	"	"	"	"	"	
Cadmium	0.292	0.200	"	"	"	"	"	"	
Copper	9.83	0.400	"	"	"	"	"	"	
Lead	27.2	0.200	"	"	"	"	"	"	
Nickel	5.88	0.400	"	"	"	"	"	"	
Silver	0.0618	0.0200	"	"	"	"	"	"	
Zinc	33.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	36.1	0.0500	mg/L dry	1	BHC0697	03/19/24	04/02/24	EPA 6020B	
Magnesium	5.26	0.0500	"	"	"	"	"	"	
Sodium	2.17	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0893	0.00100	units	1	BHD0074	04/03/24	04/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SS03@3'
2403079-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.6	%	1	BHC0422	03/15/24	03/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.187	0.0100	mmhos/cm	1	BHC0698	03/19/24	03/20/24	EPA 120.1	

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

Date Sampled: **03/05/24 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.46		pH Units	1	BHC0699	03/19/24	03/20/24	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SS05@3'
2403079-10 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHC0147	03/06/24	03/07/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0374	93.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0460	115 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0448	112 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHC0149	03/06/24	03/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	6.19	49.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Reported:
07/08/24 15:26

SS05@3'
2403079-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0175	03/07/24	03/07/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0243	72.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0307	92.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0456	03/15/24	03/29/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SS05@3'
2403079-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.74	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B
Barium	106	0.400	"	"	"	"	"	"
Cadmium	0.298	0.200	"	"	"	"	"	"
Copper	9.35	0.400	"	"	"	"	"	"
Lead	24.2	0.200	"	"	"	"	"	"
Nickel	4.90	0.400	"	"	"	"	"	"
Silver	0.0606	0.0200	"	"	"	"	"	"
Zinc	30.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	36.0	0.0500	mg/L dry	1	BHC0697	03/19/24	04/02/24	EPA 6020B	
Magnesium	5.68	0.0500	"	"	"	"	"	"	
Sodium	7.50	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.307	0.00100	units	1	BHD0074	04/03/24	04/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

SS05@3'
2403079-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	91.8	%	1	BHC0422	03/15/24	03/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.421	0.0100	mmhos/cm	1	BHC0698	03/19/24	03/20/24	EPA 120.1	

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

Date Sampled: **03/05/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.27		pH Units	1	BHC0699	03/19/24	03/20/24	EPA 9045D	

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Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

FS01@4'
2403079-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/24 11:19**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHC0147	03/06/24	03/07/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/05/24 11:19**

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	0.0437	109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0446	112 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/24 11:19**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHC0149	03/06/24	03/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/05/24 11:19**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.9	86.8 %		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 - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

FS01@4'
2403079-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/05/24 11:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0175	03/07/24	03/07/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/05/24 11:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0140	42.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0180	54.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/05/24 11:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0456	03/15/24	03/29/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/05/24 11:19**

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 - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

FS01@4'
2403079-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.50	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B
Barium	96.1	0.400	"	"	"	"	"	"
Cadmium	0.255	0.200	"	"	"	"	"	"
Copper	7.94	0.400	"	"	"	"	"	"
Lead	15.8	0.200	"	"	"	"	"	"
Nickel	6.18	0.400	"	"	"	"	"	"
Silver	0.0572	0.0200	"	"	"	"	"	"
Zinc	26.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 11:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/05/24 11:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	39.0	0.0500	mg/L dry	1	BHC0697	03/19/24	04/02/24	EPA 6020B	
Magnesium	6.04	0.0500	"	"	"	"	"	"	
Sodium	1.09	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/05/24 11:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0429	0.00100	units	1	BHD0074	04/03/24	04/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 11:19**

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 - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

FS01@4'
2403079-14 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.1	%	1	BHC0422	03/15/24	03/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/05/24 11:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.196	0.0100	mmhos/cm	1	BHC0698	03/19/24	03/20/24	EPA 120.1	

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

Date Sampled: **03/05/24 11:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.18		pH Units	1	BHC0699	03/19/24	03/20/24	EPA 9045D	

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23
Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

FS02@4'
2403079-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHC0147	03/06/24	03/07/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/05/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0353	88.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0443	111 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0447	112 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0149	03/06/24	03/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/05/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	5.46	43.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

FS02@4'
2403079-15 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/05/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0175	03/07/24	03/07/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/05/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0209	62.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0255	76.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/05/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0456	03/15/24	03/29/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/05/24 10:44**

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 - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

FS02@4'
2403079-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.45	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B
Barium	77.2	0.400	"	"	"	"	"	"
Cadmium	0.235	0.200	"	"	"	"	"	"
Copper	9.19	0.400	"	"	"	"	"	"
Lead	24.4	0.200	"	"	"	"	"	"
Nickel	5.24	0.400	"	"	"	"	"	"
Silver	0.0492	0.0200	"	"	"	"	"	"
Zinc	30.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/05/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	33.4	0.0500	mg/L dry	1	BHC0697	03/19/24	04/02/24	EPA 6020B	
Magnesium	5.45	0.0500	"	"	"	"	"	"	
Sodium	4.48	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/05/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.189	0.00100	units	1	BHD0074	04/03/24	04/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 10:44**

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 - HSR Kinzer 4-23
Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

FS02@4'
2403079-15 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	91.9	%	1	BHC0422	03/15/24	03/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/05/24 10:44**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.221	0.0100	mmhos/cm	1	BHC0698	03/19/24	03/20/24	EPA 120.1	

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

Date Sampled: **03/05/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.47		pH Units	1	BHC0699	03/19/24	03/20/24	EPA 9045D	

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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

BKG01@3'
2403079-16 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/05/24 11:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	8.42	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B	
Barium	136	0.400	"	"	"	"	"	"	"
Cadmium	0.385	0.200	"	"	"	"	"	"	"
Copper	7.73	0.400	"	"	"	"	"	"	"
Lead	14.4	0.200	"	"	"	"	"	"	"
Nickel	10.3	0.400	"	"	"	"	"	"	"
Silver	0.133	0.0200	"	"	"	"	"	"	"
Zinc	29.9	0.400	"	"	"	"	"	"	"
Selenium	0.291	0.260	"	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 11:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 11:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	88.8		%	1	BHC0422	03/15/24	03/15/24	Calculation	

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

Date Sampled: **03/05/24 11:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.19		pH Units	1	BHD0266	04/09/24	04/10/24	EPA 9045D	I-04

Summit Scientific

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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

BKG01@4'
2403079-17 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/05/24 11:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	6.33	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B	
Barium	148	0.400	"	"	"	"	"	"	
Cadmium	0.433	0.200	"	"	"	"	"	"	
Copper	7.60	0.400	"	"	"	"	"	"	
Lead	11.6	0.200	"	"	"	"	"	"	
Nickel	9.40	0.400	"	"	"	"	"	"	
Silver	0.0787	0.0200	"	"	"	"	"	"	
Zinc	27.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 11:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 11:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	91.0		%	1	BHC0422	03/15/24	03/15/24	Calculation	

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

Date Sampled: **03/05/24 11:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.58		pH Units	1	BHD0266	04/09/24	04/10/24	EPA 9045D	I-04

Summit Scientific

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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

BKG01@0.5'
2403079-18 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/05/24 12:19**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.13	0.200	mg/kg dry	1	BHC0582	03/16/24	03/24/24	EPA 6020B	
Barium	132	0.400	"	"	"	"	"	"	
Cadmium	0.386	0.200	"	"	"	"	"	"	
Copper	7.03	0.400	"	"	"	"	"	"	
Lead	13.0	0.200	"	"	"	"	"	"	
Nickel	7.48	0.400	"	"	"	"	"	"	
Silver	0.0528	0.0200	"	"	"	"	"	"	
Zinc	26.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/05/24 12:19**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0566	03/16/24	03/19/24	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/05/24 12:19**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	87.1		%	1	BHC0422	03/15/24	03/15/24	Calculation	

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

Date Sampled: **03/05/24 12:19**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.18		pH Units	1	BHD0266	04/09/24	04/10/24	EPA 9045D	I-04

Summit Scientific

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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

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 BHC0147 - EPA 5030 Soil MS

Blank (BHC0147-BLK1)

Prepared & Analyzed: 03/06/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0371		"	0.0400		92.8	50-150			
<i>Surrogate: Toluene-d8</i>	0.0432		"	0.0400		108	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0431		"	0.0400		108	50-150			

LCS (BHC0147-BS1)

Prepared & Analyzed: 03/06/24

Benzene	0.113	0.0020	mg/kg	0.100		113	70-130			
Toluene	0.110	0.0050	"	0.100		110	70-130			
Ethylbenzene	0.0911	0.0050	"	0.100		91.1	70-130			
m,p-Xylene	0.186	0.010	"	0.200		93.0	70-130			
o-Xylene	0.0888	0.0050	"	0.100		88.8	70-130			
1,2,4-Trimethylbenzene	0.0988	0.0050	"	0.100		98.8	70-130			
1,3,5-Trimethylbenzene	0.0970	0.0050	"	0.100		97.0	70-130			
Naphthalene	0.105	0.0038	"	0.100		105	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0374		"	0.0400		93.5	50-150			
<i>Surrogate: Toluene-d8</i>	0.0439		"	0.0400		110	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0426		"	0.0400		107	50-150			

Matrix Spike (BHC0147-MS1)

Source: 2403078-01

Prepared & Analyzed: 03/06/24

Benzene	0.110	0.0020	mg/kg	0.100	ND	110	70-130			
Toluene	0.105	0.0050	"	0.100	ND	105	70-130			
Ethylbenzene	0.0917	0.0050	"	0.100	ND	91.7	70-130			
m,p-Xylene	0.182	0.010	"	0.200	ND	90.8	70-130			
o-Xylene	0.0884	0.0050	"	0.100	ND	88.4	70-130			
1,2,4-Trimethylbenzene	0.0928	0.0050	"	0.100	ND	92.8	70-130			
1,3,5-Trimethylbenzene	0.0918	0.0050	"	0.100	ND	91.8	70-130			
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0373		"	0.0400		93.3	50-150			
<i>Surrogate: Toluene-d8</i>	0.0417		"	0.0400		104	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0430		"	0.0400		107	50-150			

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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

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 BHC0147 - EPA 5030 Soil MS

Matrix Spike Dup (BHC0147-MSD1)	Source: 2403078-01			Prepared & Analyzed: 03/06/24						
Benzene	0.107	0.0020	mg/kg	0.100	ND	107	70-130	3.62	30	
Toluene	0.101	0.0050	"	0.100	ND	101	70-130	4.02	30	
Ethylbenzene	0.0860	0.0050	"	0.100	ND	86.0	70-130	6.38	30	
m,p-Xylene	0.172	0.010	"	0.200	ND	85.8	70-130	5.76	30	
o-Xylene	0.0837	0.0050	"	0.100	ND	83.7	70-130	5.51	30	
1,2,4-Trimethylbenzene	0.0883	0.0050	"	0.100	ND	88.3	70-130	4.94	30	
1,3,5-Trimethylbenzene	0.0878	0.0050	"	0.100	ND	87.8	70-130	4.44	30	
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130	0.0289	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.3</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0441</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0421</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>50-150</i>			

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Project: Noble - HSR Kinzer 4-23
Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

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 BHC0149 - EPA 3550A

Blank (BHC0149-BLK1)

Prepared: 03/06/24 Analyzed: 03/07/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	15.0		"	12.5		120		30-150			

LCS (BHC0149-BS1)

Prepared: 03/06/24 Analyzed: 03/07/24

C10-C28 (DRO)	510	50	mg/kg	500		102		70-130			
Surrogate: <i>o</i> -Terphenyl	10.8		"	12.5		86.7		30-150			

Matrix Spike (BHC0149-MS1)

Source: 2403078-01

Prepared: 03/06/24 Analyzed: 03/07/24

C10-C28 (DRO)	499	50	mg/kg	500	13.5	97.1		70-130			
Surrogate: <i>o</i> -Terphenyl	8.89		"	12.5		71.1		30-150			

Matrix Spike Dup (BHC0149-MSD1)

Source: 2403078-01

Prepared: 03/06/24 Analyzed: 03/07/24

C10-C28 (DRO)	399	50	mg/kg	500	13.5	77.1		70-130	22.3	20	QM-07
Surrogate: <i>o</i> -Terphenyl	8.54		"	12.5		68.3		30-150			

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

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 BHC0175 - EPA 5030 Soil MS

Blank (BHC0175-BLK1)

Prepared & Analyzed: 03/07/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0343</i>		"	<i>0.0333</i>		<i>103</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0344</i>		"	<i>0.0333</i>		<i>103</i>		<i>40-150</i>		

LCS (BHC0175-BS1)

Prepared & Analyzed: 03/07/24

Acenaphthene	0.0376	0.00500	mg/kg	0.0333	113	31-137
Anthracene	0.0367	0.00500	"	0.0333	110	30-120
Benzo (a) anthracene	0.0340	0.00500	"	0.0333	102	30-120
Benzo (a) pyrene	0.0331	0.00500	"	0.0333	99.2	30-120
Benzo (b) fluoranthene	0.0333	0.00500	"	0.0333	100	30-120
Benzo (k) fluoranthene	0.0377	0.00500	"	0.0333	113	30-120
Chrysene	0.0390	0.00500	"	0.0333	117	30-120
Dibenz (a,h) anthracene	0.0237	0.00500	"	0.0333	71.1	30-120
Fluoranthene	0.0361	0.00500	"	0.0333	108	30-120
Fluorene	0.0371	0.00500	"	0.0333	111	30-120
Indeno (1,2,3-cd) pyrene	0.0252	0.00500	"	0.0333	75.5	30-120
Pyrene	0.0414	0.00500	"	0.0333	124	35-142
1-Methylnaphthalene	0.0305	0.00500	"	0.0333	91.4	35-142
2-Methylnaphthalene	0.0162	0.00500	"	0.0333	48.6	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0344</i>		"	<i>0.0333</i>	<i>103</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0369</i>		"	<i>0.0333</i>	<i>111</i>	<i>40-150</i>

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Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

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 BHC0175 - EPA 5030 Soil MS

Matrix Spike (BHC0175-MS1)	Source: 2403078-01			Prepared & Analyzed: 03/07/24								
Acenaphthene	0.0196	0.00500	mg/kg	0.0333	ND	58.9	31-137					
Anthracene	0.0194	0.00500	"	0.0333	ND	58.3	30-120					
Benzo (a) anthracene	0.0207	0.00500	"	0.0333	ND	62.1	30-120					
Benzo (a) pyrene	0.0194	0.00500	"	0.0333	ND	58.2	30-120					
Benzo (b) fluoranthene	0.0173	0.00500	"	0.0333	ND	51.8	30-120					
Benzo (k) fluoranthene	0.0175	0.00500	"	0.0333	ND	52.4	30-120					
Chrysene	0.0216	0.00500	"	0.0333	ND	64.9	30-120					
Dibenz (a,h) anthracene	0.0183	0.00500	"	0.0333	ND	54.9	30-120					
Fluoranthene	0.0213	0.00500	"	0.0333	ND	63.8	30-120					
Fluorene	0.0199	0.00500	"	0.0333	ND	59.6	30-120					
Indeno (1,2,3-cd) pyrene	0.0197	0.00500	"	0.0333	ND	59.2	30-120					
Pyrene	0.0227	0.00500	"	0.0333	ND	68.1	35-142					
1-Methylnaphthalene	0.0142	0.00500	"	0.0333	ND	42.6	15-130					
2-Methylnaphthalene	0.0192	0.00500	"	0.0333	ND	57.5	15-130					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0169</i>		<i>"</i>	<i>0.0333</i>		<i>50.6</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0207</i>		<i>"</i>	<i>0.0333</i>		<i>62.0</i>	<i>40-150</i>					

Matrix Spike Dup (BHC0175-MSD1)	Source: 2403078-01			Prepared & Analyzed: 03/07/24								
Acenaphthene	0.0207	0.00500	mg/kg	0.0333	ND	62.0	31-137	4.99	30			
Anthracene	0.0199	0.00500	"	0.0333	ND	59.7	30-120	2.30	30			
Benzo (a) anthracene	0.0233	0.00500	"	0.0333	ND	69.8	30-120	11.6	30			
Benzo (a) pyrene	0.0211	0.00500	"	0.0333	ND	63.2	30-120	8.14	30			
Benzo (b) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	11.6	30			
Benzo (k) fluoranthene	0.0191	0.00500	"	0.0333	ND	57.2	30-120	8.71	30			
Chrysene	0.0233	0.00500	"	0.0333	ND	69.9	30-120	7.40	30			
Dibenz (a,h) anthracene	0.0192	0.00500	"	0.0333	ND	57.6	30-120	4.71	30			
Fluoranthene	0.0220	0.00500	"	0.0333	ND	66.0	30-120	3.36	30			
Fluorene	0.0208	0.00500	"	0.0333	ND	62.3	30-120	4.40	30			
Indeno (1,2,3-cd) pyrene	0.0205	0.00500	"	0.0333	ND	61.4	30-120	3.63	30			
Pyrene	0.0242	0.00500	"	0.0333	ND	72.6	35-142	6.48	30			
1-Methylnaphthalene	0.0230	0.00500	"	0.0333	ND	68.9	15-130	47.1	50			
2-Methylnaphthalene	0.0327	0.00500	"	0.0333	ND	98.0	15-130	52.2	50			QR-02
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0196</i>		<i>"</i>	<i>0.0333</i>		<i>58.9</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0213</i>		<i>"</i>	<i>0.0333</i>		<i>63.9</i>	<i>40-150</i>					

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

Project: Noble - HSR Kinzer 4-23
Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26


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 BHC0456 - EPA 3050B

Blank (BHC0456-BLK1)		Prepared: 03/15/24 Analyzed: 03/28/24									
Boron	ND	2.00	mg/L								
LCS (BHC0456-BS1)		Prepared: 03/15/24 Analyzed: 03/28/24									
Boron	5.37	2.00	mg/L	5.00	107	80-120					
Duplicate (BHC0456-DUP1)		Source: 2403079-01		Prepared: 03/15/24 Analyzed: 03/28/24							
Boron	1.13	2.00	mg/L	1.14	0.631	20					
Matrix Spike (BHC0456-MS1)		Source: 2403079-01		Prepared: 03/15/24 Analyzed: 03/28/24							
Boron	6.14	2.00	mg/L	5.00	1.14	100	75-125				
Matrix Spike Dup (BHC0456-MSD1)		Source: 2403079-01		Prepared: 03/15/24 Analyzed: 03/29/24							
Boron	6.31	2.00	mg/L	5.00	1.14	103	75-125	2.69	25		

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Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

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 BHC0582 - EPA 3050B

Blank (BHC0582-BLK1)

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

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

LCS (BHC0582-BS1)

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

Arsenic	37.7	0.200	mg/kg wet	40.0	94.2	80-120
Barium	38.4	0.400	"	40.0	96.0	80-120
Cadmium	2.00	0.200	"	2.00	99.8	80-120
Copper	43.6	0.400	"	40.0	109	80-120
Lead	19.4	0.200	"	20.0	96.9	80-120
Nickel	42.6	0.400	"	40.0	106	80-120
Silver	2.00	0.0200	"	2.00	99.9	80-120
Zinc	42.9	0.400	"	40.0	107	80-120
Selenium	4.10	0.260	"	4.00	102	80-120

Duplicate (BHC0582-DUP1)

Source: 2403079-01

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

Arsenic	2.56	0.200	mg/kg dry	2.63	2.33	20
Barium	93.1	0.400	"	86.6	7.24	20
Cadmium	0.246	0.200	"	0.235	4.48	20
Copper	8.89	0.400	"	11.8	28.5	20
Lead	24.9	0.200	"	25.2	1.48	20
Nickel	4.89	0.400	"	4.92	0.640	20
Silver	0.0592	0.0200	"	0.0507	15.5	20
Zinc	29.7	0.400	"	28.4	4.31	20
Selenium	ND	0.260	"	ND		20

QR-04

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Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

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 BHC0582 - EPA 3050B

Matrix Spike (BHC0582-MS1)

Source: 2403079-01

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

Arsenic	43.4	0.200	mg/kg dry	44.9	2.63	91.0	75-125			
Barium	131	0.400	"	44.9	86.6	98.2	75-125			
Cadmium	2.47	0.200	"	2.24	0.235	99.9	75-125			
Copper	37.9	0.400	"	44.9	11.8	58.0	75-125			QM-07
Lead	45.5	0.200	"	22.4	25.2	90.2	75-125			
Nickel	33.8	0.400	"	44.9	4.92	64.3	75-125			QM-07
Silver	2.22	0.0200	"	2.24	0.0507	96.6	75-125			
Zinc	58.5	0.400	"	44.9	28.4	67.0	75-125			QM-07
Selenium	4.58	0.260	"	4.49	ND	102	75-125			

Matrix Spike Dup (BHC0582-MSD1)

Source: 2403079-01

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

Arsenic	44.4	0.200	mg/kg dry	44.9	2.63	93.1	75-125	2.18	25	
Barium	131	0.400	"	44.9	86.6	99.8	75-125	0.539	25	
Cadmium	2.49	0.200	"	2.24	0.235	101	75-125	0.596	25	
Copper	36.5	0.400	"	44.9	11.8	55.0	75-125	3.63	25	QM-07
Lead	45.6	0.200	"	22.4	25.2	90.9	75-125	0.323	25	
Nickel	32.6	0.400	"	44.9	4.92	61.6	75-125	3.65	25	QM-07
Silver	2.25	0.0200	"	2.24	0.0507	98.1	75-125	1.53	25	
Zinc	57.0	0.400	"	44.9	28.4	63.8	75-125	2.49	25	QM-07
Selenium	4.71	0.260	"	4.49	ND	105	75-125	2.66	25	

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Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHC0566 - 3060A Mod

Blank (BHC0566-BLK1)

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

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHC0566-BS1)

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

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

Duplicate (BHC0566-DUP1)

Source: 2403078-01

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

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHC0566-MS1)

Source: 2403078-01

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

Chromium, Hexavalent 26.6 0.30 mg/kg dry 26.9 ND 98.8 75-125

Matrix Spike Dup (BHC0566-MSD1)

Source: 2403078-01

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

Chromium, Hexavalent 26.6 0.30 mg/kg dry 26.9 ND 98.8 75-125 0.00 20

Summit Scientific

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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

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 BHC0697 - General Preparation

Blank (BHC0697-BLK1)

Prepared: 03/19/24 Analyzed: 04/02/24


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

LCS (BHC0697-BS1)

Prepared: 03/19/24 Analyzed: 04/02/24

Calcium	5.24	0.0500	mg/L wet	5.00		105	70-130			
Magnesium	5.27	0.0500	"	5.00		105	70-130			
Sodium	5.20	0.0500	"	5.00		104	70-130			

Summit Scientific



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Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

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

Summit Scientific

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

Batch BHC0422 - General Preparation

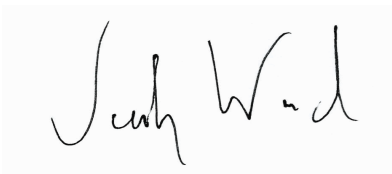
Duplicate (BHC0422-DUP1)

Source: 2403075-01

Prepared & Analyzed: 03/15/24

% Solids	91.0		%		91.2			0.138	20	
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Summit Scientific



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

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

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 BHC0698 - General Preparation

Blank (BHC0698-BLK1)

Prepared: 03/19/24 Analyzed: 03/20/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHC0698-BS1)

Prepared: 03/19/24 Analyzed: 03/20/24

Specific Conductance (EC) 0.157 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BHC0698-DUP1)

Source: 2403063-01

Prepared: 03/19/24 Analyzed: 03/20/24

Specific Conductance (EC) 0.196 0.0100 mmhos/cm 0.187 4.44 20

Summit Scientific

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Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

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

Summit Scientific

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

Batch BHC0699 - General Preparation

LCS (BHC0699-BS1)										
					Prepared: 03/19/24 Analyzed: 03/20/24					
pH	9.05		pH Units	9.18	98.6	95-105				
Duplicate (BHC0699-DUP1)										
					Source: 2403063-01 Prepared: 03/19/24 Analyzed: 03/20/24					
pH	8.63		pH Units	8.65	0.231	20				

Batch BHD0266 - General Preparation

LCS (BHD0266-BS1)										
					Prepared: 04/09/24 Analyzed: 04/10/24					
pH	9.02		pH Units	9.18	98.3	95-105				
Duplicate (BHD0266-DUP1)										
					Source: 2403079-16 Prepared: 04/09/24 Analyzed: 04/10/24					
pH	7.17		pH Units	7.19	0.279	20				

Summit Scientific

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Broomfield CO, 80020

Project: Noble - HSR Kinzer 4-23

Project Number: UWRWE-A2548-ABN
Project Manager: Jacob Whritenour

Reported:
07/08/24 15:26

Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QR-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.
- 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.
- I-04 Sample was analyzed out of recommended holding time per clients request.
- 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