

**REMEDIAL EXCAVATION  
REPORT**

**KISSLER K21-32D FLOWLINE**

ECMC SPILL TRACKING # 484535

ECMC REMEDIATION # 25474



2115 117th Avenue  
Greeley, CO 80631

Prepared by:



6855 W. 119<sup>th</sup> Ave  
Broomfield, CO 80020

## **TABLE**

TABLE 1  
SOIL ANALYTICAL DATA  
NOBLE ENERGY, INC. - KISSLER K21-32D

Soil Sample ID	Date	<sup>1</sup> 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 <sup>2</sup>		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 <sup>2,3</sup>		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01-A@5'	04/24/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.025	<0.50	<50	<50	0.196	0.305	0.399	0.218	0.319	0.0841	0.260	<0.00500	0.542	0.217	0.197	0.516	0.0175	0.0383
FL01-B@3'	04/24/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@6'	01/03/24	<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
SS01@5'	01/03/24	<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
SS02@5'	01/03/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.0057	<0.50	<50	<50	0.0588	0.0839	0.0958	0.0624	0.0958	0.0320	0.0931	0.00549	0.269	0.0632	0.0779	0.212	<0.00500	0.00980
SS03@5'	01/03/24	<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
SS04@5'	01/03/24	<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@5'	03/18/24	<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)
Residential SSL <sup>2</sup>		6 - 8.3	<6	<4mmhos/cm	2
FL01-A@5'	04/24/23	7.53	1.70	0.774	0.355
FL01-B@3'	04/24/23	7.94	1.64	0.324	0.310
FS01@6'	01/03/24	8.31	1.03	0.210	<2.00
SS01@5'	01/03/24	8.30	0.594	0.125	<2.00
SS02@5'	01/03/24	7.88	1.71	0.593	<2.00
SS03@5'	01/03/24	7.86	2.77	0.435	<2.00
SS04@5'	01/03/24	9.20	0.862	0.179	<2.00
BKG01@5'	02/19/24	8.73	NA	NA	NA
BKG02@5'	02/19/24	8.97	NA	NA	NA
BKG03@5'	02/19/24	8.16	NA	NA	NA
BKG04@5'	02/19/24	8.05	NA	NA	NA
BKG05@5'	02/19/24	8.50	NA	NA	NA
SS05@5'	03/18/24	7.98	1.59	0.384	<2.00
Highest Background		8.97	-	-	-

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 <sup>2</sup>		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL <sup>2</sup>		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01-A@5'	04/24/23	0.377	32.1	<0.206	<0.30	1.07	3.34	0.997	<0.260	<0.0206	4.72
FS01@6'	01/03/24	0.432	38.4	<0.200	<0.30	1.11	3.33	1.08	<0.260	<0.0200	5.07
SS01@5'	01/03/24	0.640	38.9	<0.200	<0.30	0.907	3.58	1.05	<0.260	<0.0200	4.33
SS02@5'	01/03/24	0.783	65.9	<0.200	<0.30	2.21	9.36	1.46	<0.260	0.0681	9.06
SS03@5'	01/03/24	0.419	41.0	<0.200	<0.30	0.933	3.14	1.16	<0.260	<0.0200	4.66
SS04@5'	01/03/24	0.612	53.9	<0.200	<0.30	1.06	4.26	1.43	<0.260	0.0246	5.41
BKG01@5'	02/19/24	1.18	NA	NA	NA	NA	NA	NA	NA	NA	NA
BKG02@5'	02/19/24	1.45	NA	NA	NA	NA	NA	NA	NA	NA	NA
BKG03@5'	02/19/24	4.58	NA	NA	NA	NA	NA	NA	NA	NA	NA
BKG04@5'	02/19/24	3.44	NA	NA	NA	NA	NA	NA	NA	NA	NA
BKG05@5'	02/19/24	1.19	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS05@5'	03/18/24	1.70	56.2	<0.200	<0.30	2.47	4.69	<0.400	<0.260	0.0269	12.7
Mean Background Concentration		2.37	-	-	-	-	-	-	-	-	-
Mean Background x1.25		2.96	-	-	-	-	-	-	-	-	-
Highest Background		4.58	-	-	-	-	-	-	-	-	-
Highest Background x1.25		5.73	-	-	-	-	-	-	-	-	-

Notes:

1. Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for
3. SSLs are applicable if a pathway for communication with groundwater is present.

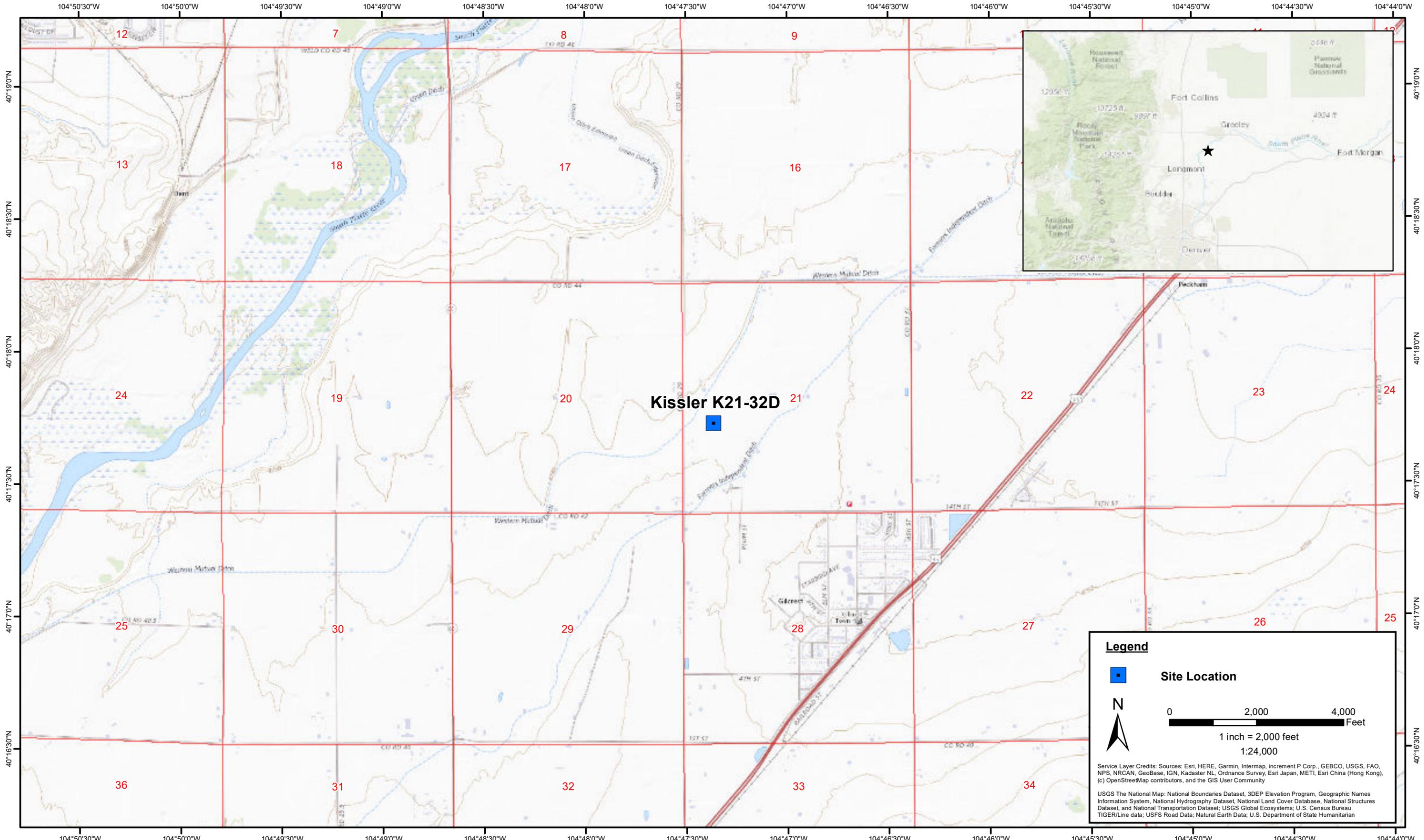
Definitions:

ECMC = Energy and Carbon Management Commission  
 TPH-GRO = Total petroleum hydrocarbons - gasoline range organics  
 TPH-DRO = Total petroleum hydrocarbons - diesel range organics  
 TPH-ORO = Total petroleum hydrocarbons - oil range organics  
 mg/kg = Milligrams per kilogram  
 SAR = Sodium Adsorption Ratio  
 EC = Electrical Conductivity  
 mmhos/cm = Millimhos per centimeter  
 mg/L = Milligrams per liter  
 < = Analytical result is less than the indicated laboratory reporting limit

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

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

## **FIGURES**



**Legend**

 **Site Location**

 N

0 2,000 4,000 Feet

1 inch = 2,000 feet  
1:24,000

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian

DATE: May 2023

DESIGNED BY: J. Whritenour

DRAWN BY: L. Reed

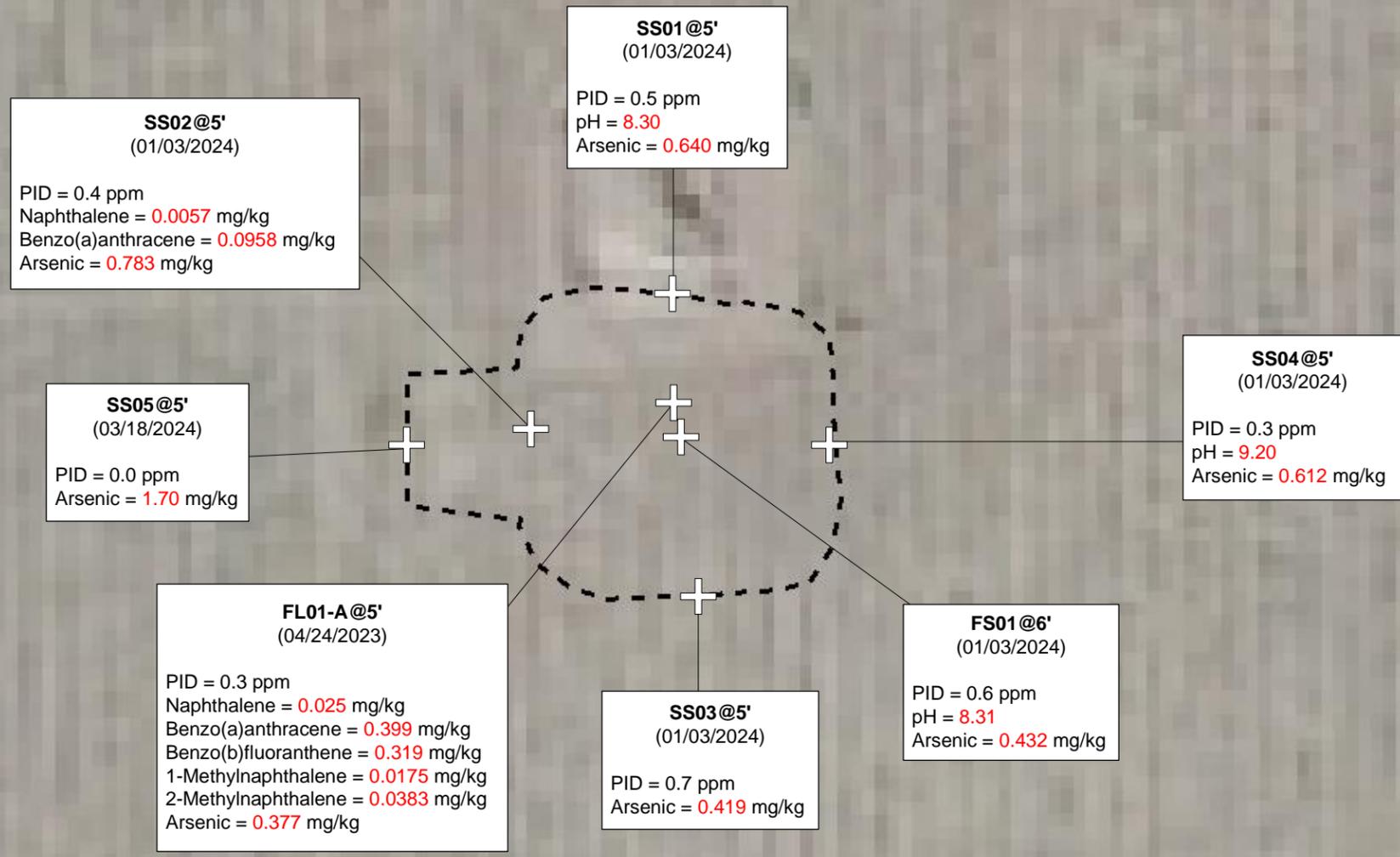


**Tasman, Inc.**  
6855 W. 119th Ave  
Broomfield, CO 80020

**Noble Energy, Inc - DJ Basin**  
**Kissler K21-32D**  
NWSW Sec. 21-T4N-R66W  
Weld County, Colorado

Site Location Map

Figure  
1



**Legend**

--- Excavation Extent – (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  
 ppm – parts per million  
 PID – Photoionization Detector

0 ft. 10 ft. 20 ft.

Image Source: Google Earth; Google 2020

DATE: 04/29/2024

DESIGNED BY: JW

DRAWN BY: MP



**Noble Energy, Inc. – DJ Basin**  
**Kissler K21-32D**  
 NWSW, Section 21, Township 4 North, Range 66 West  
 Weld County, Colorado

Excavation Soil Analytical  
 Results Map  
 (04/24/2023, 01/03/2024  
 & 03/18/2024)

Figure 2



DATE: 03/26/2024

DESIGNED BY: JW

DRAWN BY: SK



**Noble Energy, Inc. – DJ Basin**  
**Kissler K21-32D**  
NWSW, Section 21, Township 4 North, Range 66 West  
Weld County, Colorado

Background Soil Analytical  
Results Map  
(02/19/2024)

Figure 3

**ATTACHMENT A**  
**LABORATORY SOIL ANALYTICAL DATA REPORTS**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 23, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

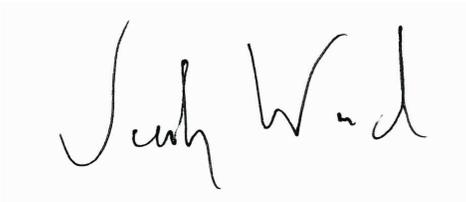
Broomfield, CO 80020

RE: Noble - Kissler K21-32D

Work Order #2401028

Enclosed are the results of analyses for samples received by Summit Scientific on 01/03/24 13:24. 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 distinct "W".

Jacob Wood For Ben Shrewsbury  
Laboratory Manager



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN

Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS01@6'	2401028-01	Soil	01/03/24 12:30	01/03/24 13:24
SS01@5'	2401028-02	Soil	01/03/24 12:32	01/03/24 13:24
SS02@5'	2401028-03	Soil	01/03/24 12:34	01/03/24 13:24
SS03@5'	2401028-04	Soil	01/03/24 12:36	01/03/24 13:24
SS04@5'	2401028-05	Soil	01/03/24 12:38	01/03/24 13:24

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.*



S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2401028

Client: Noble Tisman Client Project ID: Kessler K21-32D

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

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

Temp (°C) 8.6 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON ICE
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<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)? <sup>(1)</sup> Note the type of preservative in the comments column - HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):				

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

AS  
Custodian Printed Name

1/3/24  
Date/Time

2025



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**FS01@6'**  
**2401028-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **01/03/24 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHA0106	01/03/24	01/03/24	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: **01/03/24 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0461	115 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0396	99.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0443	111 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/03/24 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHA0105	01/03/24	01/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/03/24 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.60	68.8 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**FS01@6'**  
**2401028-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/03/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0115	01/04/24	01/05/24	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: **01/03/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0186	55.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0173	51.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **01/03/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0108	01/04/24	01/07/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/03/24 12:30**

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 - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**FS01@6'**  
**2401028-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.432	0.200	mg/kg dry	1	BHA0112	01/04/24	01/09/24	EPA 6020B
Barium	38.4	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	1.11	0.400	"	"	"	"	"	"
Lead	3.33	0.200	"	"	"	"	"	"
Nickel	1.08	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	5.07	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/03/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHA0128	01/04/24	01/04/24	EPA 7196A	

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

Date Sampled: **01/03/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	80.9	0.0500	mg/L dry	1	BHA0104	01/03/24	01/05/24	EPA 6020B	
Magnesium	17.5	0.0500	"	"	"	"	"	"	
Sodium	39.2	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **01/03/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.03	0.00100	units	1	BHA0197	01/05/24	01/05/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**FS01@6'**  
**2401028-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **01/03/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.1		%	1	BHA0107	01/04/24	01/04/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **01/03/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.210	0.0100	mmhos/cm	1	BHA0736	01/22/24	01/22/24	EPA 120.1	

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

Date Sampled: **01/03/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.31		pH Units	1	BHA0737	01/22/24	01/22/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS01@5'**  
**2401028-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **01/03/24 12:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHA0106	01/03/24	01/03/24	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: **01/03/24 12:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0489	122 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0410	103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0463	116 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/03/24 12:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHA0105	01/03/24	01/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/03/24 12:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.04	64.4 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS01@5'**  
**2401028-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/03/24 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0115	01/04/24	01/05/24	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: **01/03/24 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0166	49.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0140	42.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **01/03/24 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0108	01/04/24	01/07/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/03/24 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.  
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Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS01@5'**  
**2401028-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.640	0.200	mg/kg dry	1	BHA0112	01/04/24	01/09/24	EPA 6020B	
Barium	38.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	0.907	0.400	"	"	"	"	"	"	
Lead	3.58	0.200	"	"	"	"	"	"	
Nickel	1.05	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	4.33	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 01/03/24 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHA0128	01/04/24	01/04/24	EPA 7196A	

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

Date Sampled: 01/03/24 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	108	0.0500	mg/L dry	1	BHA0104	01/03/24	01/05/24	EPA 6020B	
Magnesium	19.3	0.0500	"	"	"	"	"	"	
Sodium	25.5	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 01/03/24 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.594	0.00100	units	1	BHA0197	01/05/24	01/05/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS01@5'**  
**2401028-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **01/03/24 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.0		%	1	BHA0107	01/04/24	01/04/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **01/03/24 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.125	0.0100	mmhos/cm	1	BHA0736	01/22/24	01/22/24	EPA 120.1	

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

Date Sampled: **01/03/24 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.30		pH Units	1	BHA0737	01/22/24	01/22/24	EPA 9045D	

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Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS02@5'**  
**2401028-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHA0106	01/03/24	01/03/24	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	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.0057</b>	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0485	121 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0445	111 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHA0105	01/03/24	01/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.22	65.8 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS02@5'**  
**2401028-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0588	0.00500	mg/kg	1	BHA0115	01/04/24	01/05/24	EPA 8270D SIM	
Anthracene	0.0839	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0958	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0624	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0958	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0320	0.00500	"	"	"	"	"	"	
Chrysene	0.0931	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.00549	0.00500	"	"	"	"	"	"	
Fluoranthene	0.269	0.00500	"	"	"	"	"	"	E
Fluorene	0.0632	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0779	0.00500	"	"	"	"	"	"	
Pyrene	0.212	0.00500	"	"	"	"	"	"	E
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.00980	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0143	42.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0245	73.4 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0108	01/04/24	01/07/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.783	0.200	mg/kg dry	1	BHA0112	01/04/24	01/09/24	EPA 6020B	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS02@5'**  
**2401028-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	65.9	0.400	mg/kg dry	1	BHA0112	01/04/24	01/09/24	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.21	0.400	"	"	"	"	"	"	
Lead	9.36	0.200	"	"	"	"	"	"	
Nickel	1.46	0.400	"	"	"	"	"	"	
Silver	0.0681	0.0200	"	"	"	"	"	"	
Zinc	9.06	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHA0128	01/04/24	01/04/24	EPA 7196A	

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

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	49.5	0.0500	mg/L dry	1	BHA0104	01/03/24	01/05/24	EPA 6020B	
Magnesium	11.8	0.0500	"	"	"	"	"	"	
Sodium	51.7	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.71	0.00100	units	1	BHA0197	01/05/24	01/05/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **01/03/24 12:34**

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

Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS02@5'**  
**2401028-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	91.0	%	1	BHA0107	01/04/24	01/04/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.593	0.0100	mmhos/cm	1	BHA0736	01/22/24	01/22/24	EPA 120.1	

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

Date Sampled: **01/03/24 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.88		pH Units	1	BHA0737	01/22/24	01/22/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS03@5'**  
**2401028-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **01/03/24 12:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHA0106	01/03/24	01/03/24	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: **01/03/24 12:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0470	118 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0418	104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0434	108 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/03/24 12:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHA0105	01/03/24	01/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/03/24 12:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.45	67.6 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS03@5'**  
**2401028-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/03/24 12:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0115	01/04/24	01/05/24	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: **01/03/24 12:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0144	43.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0164	49.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **01/03/24 12:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0108	01/04/24	01/07/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/03/24 12:36**

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 - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS03@5'**  
**2401028-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.419	0.200	mg/kg dry	1	BHA0112	01/04/24	01/09/24	EPA 6020B	
Barium	41.0	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	0.933	0.400	"	"	"	"	"	"	
Lead	3.14	0.200	"	"	"	"	"	"	
Nickel	1.16	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	4.66	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 01/03/24 12:36

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHA0128	01/04/24	01/04/24	EPA 7196A	

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

Date Sampled: 01/03/24 12:36

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	34.4	0.0500	mg/L dry	1	BHA0104	01/03/24	01/05/24	EPA 6020B	
Magnesium	9.45	0.0500	"	"	"	"	"	"	
Sodium	71.0	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 01/03/24 12:36

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.77	0.00100	units	1	BHA0197	01/05/24	01/05/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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Tasman Geosciences  
6855 W. 119th Ave.  
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Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS03@5'**  
**2401028-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **01/03/24 12:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.9		%	1	BHA0107	01/04/24	01/04/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **01/03/24 12:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.435	0.0100	mmhos/cm	1	BHA0736	01/22/24	01/22/24	EPA 120.1	

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

Date Sampled: **01/03/24 12:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.86		pH Units	1	BHA0737	01/22/24	01/22/24	EPA 9045D	

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Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS04@5'**  
**2401028-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **01/03/24 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHA0106	01/03/24	01/03/24	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: **01/03/24 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0451	113 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0439	110 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/03/24 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHA0105	01/03/24	01/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/03/24 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.23	65.8 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS04@5'**  
**2401028-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/03/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0115	01/04/24	01/05/24	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: **01/03/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0190	57.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0156	46.8 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **01/03/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0108	01/04/24	01/07/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/03/24 12:38**

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS04@5'**  
**2401028-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.612	0.200	mg/kg dry	1	BHA0112	01/04/24	01/09/24	EPA 6020B	
Barium	53.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.06	0.400	"	"	"	"	"	"	
Lead	4.26	0.200	"	"	"	"	"	"	
Nickel	1.43	0.400	"	"	"	"	"	"	
Silver	0.0246	0.0200	"	"	"	"	"	"	
Zinc	5.41	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/03/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHA0128	01/04/24	01/04/24	EPA 7196A	

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

Date Sampled: **01/03/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	83.5	0.0500	mg/L dry	1	BHA0104	01/03/24	01/05/24	EPA 6020B	
Magnesium	15.5	0.0500	"	"	"	"	"	"	
Sodium	32.7	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **01/03/24 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.862	0.00100	units	1	BHA0197	01/05/24	01/05/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**SS04@5'**  
**2401028-05 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **01/03/24 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	96.0			%	1	BHA0107	01/04/24	01/04/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **01/03/24 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.179	0.0100		mmhos/cm	1	BHA0736	01/22/24	01/22/24	EPA 120.1	

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

Date Sampled: **01/03/24 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	9.20			pH Units	1	BHA0737	01/22/24	01/22/24	EPA 9045D	

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

### 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 BHA0106 - EPA 5030 Soil MS

##### Blank (BHA0106-BLK1)

Prepared: 01/03/24 Analyzed: 01/04/24

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>	<i>0.0524</i>		<i>"</i>	<i>0.0400</i>		<i>131</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0428</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0452</i>		<i>"</i>	<i>0.0400</i>		<i>113</i>	<i>50-150</i>			

##### LCS (BHA0106-BS1)

Prepared: 01/03/24 Analyzed: 01/04/24

Benzene	0.0926	0.0020	mg/kg	0.100		92.6	70-130			
Toluene	0.127	0.0050	"	0.100		127	70-130			
Ethylbenzene	0.119	0.0050	"	0.100		119	70-130			
m,p-Xylene	0.249	0.010	"	0.200		125	70-130			
o-Xylene	0.124	0.0050	"	0.100		124	70-130			
1,2,4-Trimethylbenzene	0.105	0.0050	"	0.100		105	70-130			
1,3,5-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130			
Naphthalene	0.0945	0.0038	"	0.100		94.5	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0512</i>		<i>"</i>	<i>0.0400</i>		<i>128</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0423</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0430</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>50-150</i>			

##### Matrix Spike (BHA0106-MS1)

Source: 2401028-01

Prepared: 01/03/24 Analyzed: 01/04/24

Benzene	0.0857	0.0020	mg/kg	0.100	ND	85.7	70-130			
Toluene	0.111	0.0050	"	0.100	ND	111	70-130			
Ethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130			
m,p-Xylene	0.239	0.010	"	0.200	ND	119	70-130			
o-Xylene	0.115	0.0050	"	0.100	ND	115	70-130			
1,2,4-Trimethylbenzene	0.127	0.0050	"	0.100	ND	127	70-130			
1,3,5-Trimethylbenzene	0.127	0.0050	"	0.100	ND	127	70-130			
Naphthalene	0.0879	0.0038	"	0.100	ND	87.9	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0450</i>		<i>"</i>	<i>0.0400</i>		<i>113</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0422</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0440</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>50-150</i>			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**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		

**Batch BHA0106 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BHA0106-MSD1)</b>	<b>Source: 2401028-01</b>			<b>Prepared: 01/03/24 Analyzed: 01/04/24</b>						
Benzene	0.0914	0.0020	mg/kg	0.100	ND	91.4	70-130	6.40	30	
Toluene	0.124	0.0050	"	0.100	ND	124	70-130	11.2	30	
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130	1.67	30	
m,p-Xylene	0.245	0.010	"	0.200	ND	123	70-130	2.70	30	
o-Xylene	0.119	0.0050	"	0.100	ND	119	70-130	3.20	30	
1,2,4-Trimethylbenzene	0.124	0.0050	"	0.100	ND	124	70-130	2.73	30	
1,3,5-Trimethylbenzene	0.127	0.0050	"	0.100	ND	127	70-130	0.566	30	
Naphthalene	0.0883	0.0038	"	0.100	ND	88.3	70-130	0.443	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0491</i>		<i>"</i>	<i>0.0400</i>		<i>123</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0421</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0447</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>50-150</i>			

**Batch BHA0161 - EPA 5030 Soil MS**

<b>Blank (BHA0161-BLK1)</b>	<b>Prepared: 01/04/24 Analyzed: 01/05/24</b>									
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0308</i>		<i>"</i>	<i>0.0400</i>		<i>76.9</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.3</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0462</i>		<i>"</i>	<i>0.0400</i>		<i>115</i>	<i>50-150</i>			

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Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch BHA0161 - EPA 5030 Soil MS**

**LCS (BHA0161-BS1)**

Prepared: 01/04/24 Analyzed: 01/05/24

Benzene	0.110	0.0020	mg/kg	0.100		110	70-130		
Toluene	0.0986	0.0050	"	0.100		98.6	70-130		
Ethylbenzene	0.0992	0.0050	"	0.100		99.2	70-130		
m,p-Xylene	0.190	0.010	"	0.200		95.1	70-130		
o-Xylene	0.0965	0.0050	"	0.100		96.5	70-130		
1,2,4-Trimethylbenzene	0.0974	0.0050	"	0.100		97.4	70-130		
1,3,5-Trimethylbenzene	0.0944	0.0050	"	0.100		94.4	70-130		
Naphthalene	0.0980	0.0038	"	0.100		98.0	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0310</i>		<i>"</i>	<i>0.0400</i>		<i>77.4</i>	<i>50-150</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>50-150</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0459</i>		<i>"</i>	<i>0.0400</i>		<i>115</i>	<i>50-150</i>		

**Matrix Spike (BHA0161-MS1)**

Source: 2401050-01

Prepared: 01/04/24 Analyzed: 01/05/24

Benzene	0.0602	0.0020	mg/kg	0.100	ND	60.2	70-130		QM-07
Toluene	0.0526	0.0050	"	0.100	ND	52.6	70-130		QM-07
Ethylbenzene	0.0469	0.0050	"	0.100	ND	46.9	70-130		QM-07
m,p-Xylene	0.0860	0.010	"	0.200	ND	43.0	70-130		QM-07
o-Xylene	0.0452	0.0050	"	0.100	ND	45.2	70-130		QM-07
1,2,4-Trimethylbenzene	0.0221	0.0050	"	0.100	ND	22.1	70-130		QM-07
1,3,5-Trimethylbenzene	0.0320	0.0050	"	0.100	ND	32.0	70-130		QM-07
Naphthalene	0.0138	0.0038	"	0.100	ND	13.8	70-130		QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0632</i>		<i>"</i>	<i>0.0400</i>		<i>158</i>	<i>50-150</i>		<i>QM-07</i>
<i>Surrogate: Toluene-d8</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.4</i>	<i>50-150</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0471</i>		<i>"</i>	<i>0.0400</i>		<i>118</i>	<i>50-150</i>		

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

Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**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 BHA0105 - EPA 3550A**

**Blank (BHA0105-BLK1)**

Prepared: 01/03/24 Analyzed: 01/04/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.4		"	12.5		83.0		30-150			

**LCS (BHA0105-BS1)**

Prepared: 01/03/24 Analyzed: 01/04/24

C10-C28 (DRO)	435	50	mg/kg	500		87.0		70-130			
Surrogate: <i>o</i> -Terphenyl	9.56		"	12.5		76.5		30-150			

**Matrix Spike (BHA0105-MS1)**

Source: 2401022-01

Prepared: 01/03/24 Analyzed: 01/04/24

C10-C28 (DRO)	1250	50	mg/kg	500	872	75.6		70-130			
Surrogate: <i>o</i> -Terphenyl	5.36		"	12.5		42.8		30-150			

**Matrix Spike Dup (BHA0105-MSD1)**

Source: 2401022-01

Prepared: 01/03/24 Analyzed: 01/04/24

C10-C28 (DRO)	1290	50	mg/kg	500	872	83.9		70-130	3.26	20	
Surrogate: <i>o</i> -Terphenyl	5.97		"	12.5		47.8		30-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**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 BHA0115 - EPA 5030 Soil MS**

**Blank (BHA0115-BLK1)**

Prepared & Analyzed: 01/04/24

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>0.0273</i>		"	<i>0.0333</i>		<i>81.9</i>		<i>40-150</i>		

**LCS (BHA0115-BS1)**

Prepared & Analyzed: 01/04/24

Acenaphthene	0.0309	0.00500	mg/kg	0.0333		92.7		31-137		
Anthracene	0.0310	0.00500	"	0.0333		93.0		30-120		
Benzo (a) anthracene	0.0280	0.00500	"	0.0333		83.9		30-120		
Benzo (a) pyrene	0.0302	0.00500	"	0.0333		90.6		30-120		
Benzo (b) fluoranthene	0.0294	0.00500	"	0.0333		88.2		30-120		
Benzo (k) fluoranthene	0.0297	0.00500	"	0.0333		89.0		30-120		
Chrysene	0.0276	0.00500	"	0.0333		82.7		30-120		
Dibenz (a,h) anthracene	0.0274	0.00500	"	0.0333		82.2		30-120		
Fluoranthene	0.0331	0.00500	"	0.0333		99.2		30-120		
Fluorene	0.0311	0.00500	"	0.0333		93.4		30-120		
Indeno (1,2,3-cd) pyrene	0.0270	0.00500	"	0.0333		80.9		30-120		
Pyrene	0.0287	0.00500	"	0.0333		86.0		35-142		
1-Methylnaphthalene	0.0280	0.00500	"	0.0333		83.9		35-142		
2-Methylnaphthalene	0.0278	0.00500	"	0.0333		83.5		35-142		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0283</i>		"	<i>0.0333</i>		<i>84.8</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0315</i>		"	<i>0.0333</i>		<i>94.6</i>		<i>40-150</i>		

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**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 BHA0115 - EPA 5030 Soil MS**

<b>Matrix Spike (BHA0115-MS1)</b>	<b>Source: 2401007-01</b>			<b>Prepared &amp; Analyzed: 01/04/24</b>								
Acenaphthene	0.0206	0.00500	mg/kg	0.0333	ND	61.9	31-137					
Anthracene	0.0210	0.00500	"	0.0333	ND	62.9	30-120					
Benzo (a) anthracene	0.0198	0.00500	"	0.0333	ND	59.4	30-120					
Benzo (a) pyrene	0.0212	0.00500	"	0.0333	ND	63.5	30-120					
Benzo (b) fluoranthene	0.0192	0.00500	"	0.0333	ND	57.5	30-120					
Benzo (k) fluoranthene	0.0191	0.00500	"	0.0333	ND	57.2	30-120					
Chrysene	0.0187	0.00500	"	0.0333	ND	56.0	30-120					
Dibenz (a,h) anthracene	0.0176	0.00500	"	0.0333	ND	52.7	30-120					
Fluoranthene	0.0231	0.00500	"	0.0333	0.0105	37.8	30-120					
Fluorene	0.0214	0.00500	"	0.0333	ND	64.2	30-120					
Indeno (1,2,3-cd) pyrene	0.0164	0.00500	"	0.0333	ND	49.1	30-120					
Pyrene	0.0205	0.00500	"	0.0333	0.00697	40.6	35-142					
1-Methylnaphthalene	0.0199	0.00500	"	0.0333	ND	59.7	15-130					
2-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.4	15-130					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0200</i>		<i>"</i>	<i>0.0333</i>		<i>59.9</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0195</i>		<i>"</i>	<i>0.0333</i>		<i>58.6</i>	<i>40-150</i>					

<b>Matrix Spike Dup (BHA0115-MSD1)</b>	<b>Source: 2401007-01</b>			<b>Prepared &amp; Analyzed: 01/04/24</b>								
Acenaphthene	0.0204	0.00500	mg/kg	0.0333	ND	61.2	31-137	1.24	30			
Anthracene	0.0200	0.00500	"	0.0333	ND	60.0	30-120	4.67	30			
Benzo (a) anthracene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	3.86	30			
Benzo (a) pyrene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	8.81	30			
Benzo (b) fluoranthene	0.0180	0.00500	"	0.0333	ND	54.0	30-120	6.25	30			
Benzo (k) fluoranthene	0.0177	0.00500	"	0.0333	ND	53.0	30-120	7.61	30			
Chrysene	0.0175	0.00500	"	0.0333	ND	52.4	30-120	6.60	30			
Dibenz (a,h) anthracene	0.0163	0.00500	"	0.0333	ND	49.0	30-120	7.27	30			
Fluoranthene	0.0225	0.00500	"	0.0333	0.0105	35.9	30-120	2.71	30			
Fluorene	0.0214	0.00500	"	0.0333	ND	64.1	30-120	0.143	30			
Indeno (1,2,3-cd) pyrene	0.0166	0.00500	"	0.0333	ND	49.8	30-120	1.28	30			
Pyrene	0.0210	0.00500	"	0.0333	0.00697	42.1	35-142	2.35	30			
1-Methylnaphthalene	0.0184	0.00500	"	0.0333	ND	55.3	15-130	7.55	50			
2-Methylnaphthalene	0.0190	0.00500	"	0.0333	ND	56.9	15-130	4.42	50			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0190</i>		<i>"</i>	<i>0.0333</i>		<i>57.0</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0189</i>		<i>"</i>	<i>0.0333</i>		<i>56.7</i>	<i>40-150</i>					

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**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 BHA0108 - EPA 3050B**

**Blank (BHA0108-BLK1)**

Prepared: 01/04/24 Analyzed: 01/07/24

Boron ND 2.00 mg/L

**LCS (BHA0108-BS1)**

Prepared: 01/04/24 Analyzed: 01/07/24

Boron 5.89 2.00 mg/L 5.00 118 80-120

**Duplicate (BHA0108-DUP1)**

**Source: 2312507-01**

Prepared: 01/04/24 Analyzed: 01/07/24

Boron 0.0834 2.00 mg/L 0.107 24.9 20 QR-01

**Matrix Spike (BHA0108-MS1)**

**Source: 2312507-01**

Prepared: 01/04/24 Analyzed: 01/07/24

Boron 6.20 2.00 mg/L 5.00 0.107 122 75-125

**Matrix Spike Dup (BHA0108-MSD1)**

**Source: 2312507-01**

Prepared: 01/04/24 Analyzed: 01/07/24

Boron 6.23 2.00 mg/L 5.00 0.107 123 75-125 0.552 25

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BHA0112 - EPA 3050B**

**Blank (BHA0112-BLK1)**

Prepared: 01/04/24 Analyzed: 01/09/24

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 (BHA0112-BS1)**

Prepared: 01/04/24 Analyzed: 01/09/24

Arsenic	39.7	0.200	mg/kg wet	40.0	99.3	80-120
Barium	38.6	0.400	"	40.0	96.5	80-120
Cadmium	1.93	0.200	"	2.00	96.3	80-120
Copper	41.5	0.400	"	40.0	104	80-120
Lead	19.5	0.200	"	20.0	97.6	80-120
Nickel	40.0	0.400	"	40.0	100	80-120
Silver	1.95	0.0200	"	2.00	97.4	80-120
Zinc	40.3	0.400	"	40.0	101	80-120
Selenium	4.65	0.260	"	4.00	116	80-120

**Duplicate (BHA0112-DUP1)**

Source: 2310539-01RE3

Prepared: 01/04/24 Analyzed: 01/09/24

Arsenic	1.47	0.200	mg/kg wet	1.38	6.06	20
Barium	116	0.400	"	103	11.9	20
Cadmium	0.131	0.200	"	0.128	2.47	20
Copper	2.25	0.400	"	2.14	5.15	20
Lead	6.00	0.200	"	5.59	7.10	20
Nickel	2.59	0.400	"	2.42	6.67	20
Silver	0.0272	0.0200	"	0.0268	1.48	20
Zinc	8.80	0.400	"	8.37	5.02	20
Selenium	ND	0.260	"	ND		20

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**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 BHA0112 - EPA 3050B**

**Matrix Spike (BHA0112-MS1)**

Source: 2310539-01RE3 Prepared: 01/04/24 Analyzed: 01/09/24

Arsenic	11.8	0.200	mg/kg wet	40.0	1.38	26.1	75-125				QM-07
Barium	147	0.400	"	40.0	103	109	75-125				
Cadmium	2.03	0.200	"	2.00	0.128	95.0	75-125				
Copper	13.6	0.400	"	40.0	2.14	28.7	75-125				QM-07
Lead	23.0	0.200	"	20.0	5.59	86.8	75-125				
Nickel	13.9	0.400	"	40.0	2.42	28.6	75-125				QM-07
Silver	1.88	0.0200	"	2.00	0.0268	92.6	75-125				
Zinc	19.2	0.400	"	40.0	8.37	27.2	75-125				QM-07
Selenium	3.78	0.260	"	4.00	ND	94.4	75-125				

**Matrix Spike Dup (BHA0112-MSD1)**

Source: 2310539-01RE3 Prepared: 01/04/24 Analyzed: 01/09/24

Arsenic	11.9	0.200	mg/kg wet	40.0	1.38	26.3	75-125	0.819	25		QM-07
Barium	145	0.400	"	40.0	103	106	75-125	0.865	25		
Cadmium	2.03	0.200	"	2.00	0.128	95.2	75-125	0.197	25		
Copper	13.6	0.400	"	40.0	2.14	28.7	75-125	0.103	25		QM-07
Lead	22.9	0.200	"	20.0	5.59	86.6	75-125	0.234	25		
Nickel	13.9	0.400	"	40.0	2.42	28.7	75-125	0.320	25		QM-07
Silver	1.87	0.0200	"	2.00	0.0268	92.1	75-125	0.576	25		
Zinc	19.3	0.400	"	40.0	8.37	27.3	75-125	0.282	25		QM-07
Selenium	3.79	0.260	"	4.00	ND	94.6	75-125	0.264	25		

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

Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BHA0128 - 3060A Mod**

**Blank (BHA0128-BLK1)**

Prepared & Analyzed: 01/04/24

Chromium, Hexavalent      ND      0.30    mg/kg wet

**LCS (BHA0128-BS1)**

Prepared & Analyzed: 01/04/24

Chromium, Hexavalent      25.6      0.30    mg/kg wet      25.0      102      80-120

**Duplicate (BHA0128-DUP1)**

**Source: 2401008-01**

Prepared & Analyzed: 01/04/24

Chromium, Hexavalent      ND      0.30    mg/kg dry      ND      20

**Matrix Spike (BHA0128-MS1)**

**Source: 2401008-01**

Prepared & Analyzed: 01/04/24

Chromium, Hexavalent      26.4      0.30    mg/kg dry      26.5      ND      99.6      75-125

**Matrix Spike Dup (BHA0128-MSD1)**

**Source: 2401008-01**

Prepared & Analyzed: 01/04/24

Chromium, Hexavalent      25.9      0.30    mg/kg dry      26.5      ND      97.4      75-125      2.23      20

Summit Scientific

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**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 BHA0104 - General Preparation**

**Blank (BHA0104-BLK1)**

Prepared: 01/03/24 Analyzed: 01/05/24

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

**LCS (BHA0104-BS1)**

Prepared: 01/03/24 Analyzed: 01/05/24

Calcium	6.25	0.0500	mg/L wet	5.00	125	70-130				
Magnesium	5.41	0.0500	"	5.00	108	70-130				
Sodium	5.20	0.0500	"	5.00	104	70-130				

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 6855 W. 119th Ave.  
 Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
 Project Manager: Jacob Whritenour

**Reported:**  
 01/23/24 08:46

**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 BHA0107 - General Preparation**

**Duplicate (BHA0107-DUP1)**

**Source: 2312558-01**

Prepared & Analyzed: 01/04/24

% Solids	96.7		%		96.3			0.375	20	
----------	------	--	---	--	------	--	--	-------	----	--

Summit Scientific



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



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

**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 BHA0736 - General Preparation**

**Blank (BHA0736-BLK1)**

Prepared & Analyzed: 01/22/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHA0736-BS1)**

Prepared & Analyzed: 01/22/24

Specific Conductance (EC) 0.152 0.0100 mmhos/cm 0.150 101 95-105

**Duplicate (BHA0736-DUP1)**

Source: 2312541-01

Prepared & Analyzed: 01/22/24

Specific Conductance (EC) 1.60 0.0100 mmhos/cm 1.59 0.503 20

Summit Scientific

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



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

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

**Summit Scientific**

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

**Batch BHA0737 - General Preparation**

**LCS (BHA0737-BS1)**

Prepared & Analyzed: 01/22/24

pH	9.16	pH Units	9.18	99.8	95-105
----	------	----------	------	------	--------

**Duplicate (BHA0737-DUP1)**

Source: 2312541-01

Prepared & Analyzed: 01/22/24

pH	8.01	pH Units	8.00	0.125	20
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Summit Scientific



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
01/23/24 08:46

### Notes and Definitions

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

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

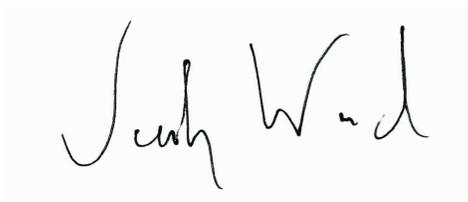
303.277.9310

February 29, 2024

Jacob Whritenour  
Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield, CO 80020  
RE: Noble - Kissler K21-32D  
Work Order #2402332

Enclosed are the results of analyses for samples received by Summit Scientific on 02/19/24 17:34. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Ben Shrewsbury  
Laboratory Manager



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN

Project Manager: Jacob Whritenour

**Reported:**  
02/29/24 09:09

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG01@5'	2402332-01	Soil	02/19/24 10:35	02/19/24 17:34
BKG02@5'	2402332-02	Soil	02/19/24 10:45	02/19/24 17:34
BKG03@5'	2402332-03	Soil	02/19/24 10:55	02/19/24 17:34
BKG04@5'	2402332-04	Soil	02/19/24 11:10	02/19/24 17:34
BKG05@5'	2402332-05	Soil	02/19/24 11:20	02/19/24 17:34

Summit Scientific

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

Client: Noble/Tasman		Project Manager: Jake Whritenour		Company: <i>Chevron</i>	
Address: 6855 W. 119th Ave.		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location:	
City/State/Zip: Broomfield/CO/ 80020				AFE#:	
Phone:		Project Name: <i>Kissler K21-32D</i>		PO/Billing Codes:	
Sampler Name: <i>Conor Lovell</i>		Project Number:		Contact: Dan Peterson	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Other	Analysis Requested							Special Instructions				
					HCl	HNO3	None	Other	Water	Soil			BTEXN	1,2,4 & 1,3,5-TMBS	TDS, Cl, SO4	TPH	PAH	P, H, EC, SAR	Metals	Boron	pH	Arsenic		
1	<i>SS05 05' LCL</i>	<i>2/19/24</i>	<i>1015</i>	<i>2</i>			<i>X</i>		<i>X</i>	<i>X</i>			<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>CL</i>	
2	<i>BK601 05'</i>		<i>1035</i>																				<i>X</i>	<i>X</i>
3	<i>BK602 05'</i>		<i>1045</i>																					
4	<i>BK603 05'</i>		<i>1055</i>																					
5	<i>BK604 05'</i>		<i>1110</i>																					
6	<i>BK605 05'</i>		<i>1120</i>																					
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								

Relinquished by: <i>Conor Lovell</i>	Date/Time: <i>2/19/24 1340</i>	Received by: <b>Tasman Lock Box</b>	Date/Time: <i>2/19/24 1340</i>	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: <i>2/19/24 1734</i>	Received by: <i>[Signature]</i>	Date/Time: <i>2/19/24 1734</i>	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: <i>11.2</i>	Corrected Temperature: <i>4</i>	IR gun #: <i>1</i>	HNO3 lot #:			

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2402332

Client: Noble Tasma Client Project ID: Kissler K21-32D

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

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

Temp (°C)  Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> <b>NOTE:</b> 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"/>	<u>on site</u>
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Sameday</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<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)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):

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

AS

Custodian Printed Name

2/19/24

Date/Time



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

Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
02/29/24 09:09

**BKG01@5'**  
**2402332-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/19/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.18	0.200	mg/kg dry	1	BHB0705	02/22/24	02/23/24	EPA 6020B	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/19/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	BHB0846	02/27/24	02/28/24	Calculation	

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

Date Sampled: **02/19/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.73		pH Units	1	BHB0682	02/21/24	02/21/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
02/29/24 09:09

**BKG02@5'**  
**2402332-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/19/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.45	0.200	mg/kg dry	1	BHB0705	02/22/24	02/23/24	EPA 6020B	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/19/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	95.2		%	1	BHB0846	02/27/24	02/28/24	Calculation	

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

Date Sampled: **02/19/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.97		pH Units	1	BHB0682	02/21/24	02/21/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
02/29/24 09:09

**BKG03@5'**  
**2402332-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/19/24 10:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.58	0.200	mg/kg dry	1	BHB0705	02/22/24	02/23/24	EPA 6020B	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/19/24 10:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	83.2		%	1	BHB0846	02/27/24	02/28/24	Calculation	

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

Date Sampled: **02/19/24 10:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.16		pH Units	1	BHB0682	02/21/24	02/21/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
02/29/24 09:09

**BKG04@5'**  
**2402332-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/19/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.44	0.200	mg/kg dry	1	BHB0705	02/22/24	02/23/24	EPA 6020B	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/19/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	86.8		%	1	BHB0846	02/27/24	02/28/24	Calculation	

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

Date Sampled: **02/19/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.05		pH Units	1	BHB0682	02/21/24	02/21/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
02/29/24 09:09

**BKG05@5'**  
**2402332-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/19/24 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.19	0.200	mg/kg dry	1	BHB0705	02/22/24	02/23/24	EPA 6020B	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/19/24 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.8		%	1	BHB0846	02/27/24	02/28/24	Calculation	

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

Date Sampled: **02/19/24 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.50		pH Units	1	BHB0682	02/21/24	02/21/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
02/29/24 09:09

**Total Metals by EPA 6020B - Quality Control**

**Summit Scientific**

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

**Batch BHB0705 - EPA 3050B**

<b>Blank (BHB0705-BLK1)</b>		Prepared: 02/22/24 Analyzed: 02/23/24								
Arsenic	ND	0.200	mg/kg wet							
<b>LCS (BHB0705-BS1)</b>		Prepared: 02/22/24 Analyzed: 02/23/24								
Arsenic	37.8	0.200	mg/kg wet	40.0	94.6	80-120				
<b>Duplicate (BHB0705-DUP1)</b>		<b>Source: 2402331-01</b>		Prepared: 02/22/24 Analyzed: 02/23/24						
Arsenic	2.26	0.200	mg/kg dry	4.76	71.0	20				QR-04
<b>Matrix Spike (BHB0705-MS1)</b>		<b>Source: 2402331-01</b>		Prepared: 02/22/24 Analyzed: 02/23/24						
Arsenic	51.4	0.200	mg/kg dry	54.0	4.76	86.3	75-125			
<b>Matrix Spike Dup (BHB0705-MSD1)</b>		<b>Source: 2402331-01</b>		Prepared: 02/22/24 Analyzed: 02/23/24						
Arsenic	51.7	0.200	mg/kg dry	54.0	4.76	86.9	75-125	0.607	25	

Summit Scientific

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



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
 Project Manager: Jacob Whritenour

**Reported:**  
 02/29/24 09:09

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

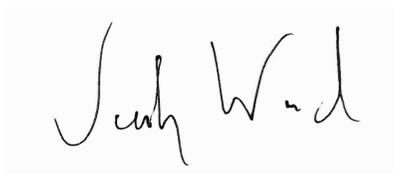
**Summit Scientific**

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

**Batch BHB0846 - General Preparation**

Duplicate (BHB0846-DUP1)	Source: 2402251-02	Prepared: 02/27/24	Analyzed: 02/28/24
% Solids	93.2	%	94.8
			1.68
			20

Summit Scientific



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



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
02/29/24 09:09

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

**Summit Scientific**

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

**Batch BHB0682 - General Preparation**

**LCS (BHB0682-BS1)**

Prepared & Analyzed: 02/21/24

pH 9.16 pH Units 9.18 99.8 95-105

**Duplicate (BHB0682-DUP1)**

Source: 2402158-01

Prepared & Analyzed: 02/21/24

pH 8.35 pH Units 8.10 3.04 20

Summit Scientific

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



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
02/29/24 09:09

### 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.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 24, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

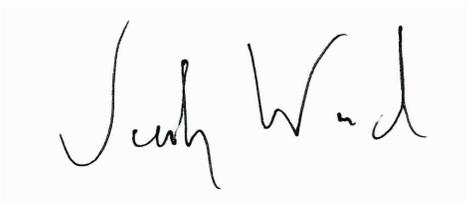
Broomfield, CO 80020

RE: Noble - Kissler K21-32D

Work Order #2403262

Enclosed are the results of analyses for samples received by Summit Scientific on 03/18/24 17:57. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Ben Shrewsbury  
Laboratory Manager



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN

Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS05@5'	2403262-01	Soil	03/18/24 10:10	03/18/24 17:57

Summit Scientific

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



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

Lab ID	Page 1 of 1
2403262	

<b>Send Data To:</b>		<b>Send Invoice To:</b>
Client: Noble / Tasman	Project Manager: Jake Whritenour	Company: Chevron
Address: 6855 W. 119th Ave	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location:
City/State/Zip: Broomfield, CO 80020		AFE#:
Phone: 937-554-5108	Project Name: <i>Hissler K21-32D</i>	PO/Billing Codes:
Sampler Name: <i>Molly P. Sywiec</i>	Project Number:	Contact: <i>Keith McLean</i>

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions				
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS	Metals - 915		HOLD			
1	<i>SSOS @ 5'</i>	<i>3-18-24</i>	<i>1010</i>	<i>2</i>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		pH, EC, SAR by saturated paste								
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							

Relinquished by: <i>MP</i>	Date/Time: <i>3-18-24 / 1720</i>	Received by: <i>Tasman Lock Box</i>	Date/Time: <i>3-18-24 / 1720</i>	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: <i>3/18/24 / 1757</i>	Received by: <i>[Signature]</i>	Date/Time: <i>3/18/24 / 1757</i>	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: <i>12.1</i>	Corrected Temperature: <i>9</i>	IR gun #: <i>1</i>	HNO3 lot #:			

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2403262

Client: Noble Frisman Client Project ID: Kissler K21-32D

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

-

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

Temp (°C)  Thermometer #

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

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

AS

Custodian Printed Name

3/18/24  
Date/Time



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**SS05@5'**  
**2403262-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/18/24 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHC0651	03/18/24	03/19/24	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: **03/18/24 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0399	99.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0400	100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0414	103 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/18/24 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHC0653	03/18/24	03/18/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/18/24 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.63	69.0 %		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 - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**SS05@5'**  
**2403262-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/18/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0690	03/19/24	03/20/24	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: **03/18/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0242	72.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0258	77.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/18/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0676	03/19/24	04/24/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/18/24 10:10**

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 - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**SS05@5'**  
**2403262-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.70	0.200	mg/kg dry	1	BHC0733	03/20/24	04/19/24	EPA 6020B	
Barium	56.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.47	0.400	"	"	"	"	"	"	
Lead	4.69	0.200	"	"	"	"	"	"	
Nickel	ND	0.400	"	"	"	"	"	"	
Silver	0.0269	0.0200	"	"	"	"	"	"	
Zinc	12.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/18/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0667	03/19/24	03/20/24	EPA 7196A	

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

Date Sampled: **03/18/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.7	0.0500	mg/L dry	1	BHC0955	03/25/24	04/23/24	EPA 6020B	
Magnesium	7.90	0.0500	"	"	"	"	"	"	
Sodium	38.7	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/18/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.59	0.00100	units	1	BHD0875	04/24/24	04/24/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Summit Scientific

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**SS05@5'**  
**2403262-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/18/24 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	93.8			%	1	BHC0659	03/19/24	03/21/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/18/24 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.384	0.0100		mmhos/cm	1	BHC0956	03/25/24	03/29/24	EPA 120.1	

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

Date Sampled: **03/18/24 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.98			pH Units	1	BHC0957	03/25/24	03/29/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch BHC0651 - EPA 5030 Soil MS

##### Blank (BHC0651-BLK1)

Prepared: 03/18/24 Analyzed: 03/19/24

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>	0.0408		"	0.0400		102	50-150			
<i>Surrogate: Toluene-d8</i>	0.0403		"	0.0400		101	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0414		"	0.0400		104	50-150			

##### LCS (BHC0651-BS1)

Prepared: 03/18/24 Analyzed: 03/19/24

Benzene	0.111	0.0020	mg/kg	0.100		111	70-130			
Toluene	0.109	0.0050	"	0.100		109	70-130			
Ethylbenzene	0.108	0.0050	"	0.100		108	70-130			
m,p-Xylene	0.219	0.010	"	0.200		109	70-130			
o-Xylene	0.111	0.0050	"	0.100		111	70-130			
1,2,4-Trimethylbenzene	0.0953	0.0050	"	0.100		95.3	70-130			
1,3,5-Trimethylbenzene	0.0978	0.0050	"	0.100		97.8	70-130			
Naphthalene	0.0818	0.0038	"	0.100		81.8	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0390		"	0.0400		97.5	50-150			
<i>Surrogate: Toluene-d8</i>	0.0396		"	0.0400		99.1	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0406		"	0.0400		102	50-150			

##### Matrix Spike (BHC0651-MS1)

Source: 2403257-01

Prepared: 03/18/24 Analyzed: 03/19/24

Benzene	0.0886	0.0020	mg/kg	0.100	ND	88.6	70-130			
Toluene	0.0848	0.0050	"	0.100	ND	84.8	70-130			
Ethylbenzene	0.0801	0.0050	"	0.100	ND	80.1	70-130			
m,p-Xylene	0.160	0.010	"	0.200	ND	80.2	70-130			
o-Xylene	0.0818	0.0050	"	0.100	ND	81.8	70-130			
1,2,4-Trimethylbenzene	0.0722	0.0050	"	0.100	ND	72.2	70-130			
1,3,5-Trimethylbenzene	0.0731	0.0050	"	0.100	ND	73.1	70-130			
Naphthalene	0.0448	0.0038	"	0.100	ND	44.8	70-130			QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0409		"	0.0400		102	50-150			
<i>Surrogate: Toluene-d8</i>	0.0398		"	0.0400		99.4	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0412		"	0.0400		103	50-150			

Summit Scientific

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch BHC0651 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BHC0651-MSD1)</b>	<b>Source: 2403257-01</b>			<b>Prepared: 03/18/24 Analyzed: 03/19/24</b>						
Benzene	0.0955	0.0020	mg/kg	0.100	ND	95.5	70-130	7.40	30	
Toluene	0.0918	0.0050	"	0.100	ND	91.8	70-130	7.99	30	
Ethylbenzene	0.0841	0.0050	"	0.100	ND	84.1	70-130	4.90	30	
m,p-Xylene	0.168	0.010	"	0.200	ND	84.2	70-130	4.89	30	
o-Xylene	0.0847	0.0050	"	0.100	ND	84.7	70-130	3.49	30	
1,2,4-Trimethylbenzene	0.0740	0.0050	"	0.100	ND	74.0	70-130	2.46	30	
1,3,5-Trimethylbenzene	0.0741	0.0050	"	0.100	ND	74.1	70-130	1.35	30	
Naphthalene	0.0465	0.0038	"	0.100	ND	46.5	70-130	3.81	30	QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.3</i>	<i>50-150</i>			

Summit Scientific

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

Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BHC0653 - EPA 3550A**

**Blank (BHC0653-BLK1)**

Prepared: 03/18/24 Analyzed: 03/19/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.2		"	12.5		89.7	30-150				

**LCS (BHC0653-BS1)**

Prepared: 03/18/24 Analyzed: 03/19/24

C10-C28 (DRO)	456	50	mg/kg	500		91.2	70-130				
Surrogate: <i>o</i> -Terphenyl	11.0		"	12.5		88.2	30-150				

**Matrix Spike (BHC0653-MS1)**

Source: 2403257-01

Prepared: 03/18/24 Analyzed: 03/19/24

C10-C28 (DRO)	404	50	mg/kg	500	34.5	73.9	70-130				
Surrogate: <i>o</i> -Terphenyl	7.86		"	12.5		62.9	30-150				

**Matrix Spike Dup (BHC0653-MSD1)**

Source: 2403257-01

Prepared: 03/18/24 Analyzed: 03/19/24

C10-C28 (DRO)	396	50	mg/kg	500	34.5	72.4	70-130	1.94	20		
Surrogate: <i>o</i> -Terphenyl	7.68		"	12.5		61.4	30-150				

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**PAH by EPA Method 8270D SIM - Quality Control**

**Summit Scientific**

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

**Batch BHC0690 - EPA 5030 Soil MS**

**Blank (BHC0690-BLK1)**

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

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>0.0290</i>		"	<i>0.0333</i>		<i>87.0</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0328</i>		"	<i>0.0333</i>		<i>98.3</i>		<i>40-150</i>		

**LCS (BHC0690-BS1)**

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

Acenaphthene	0.0316	0.00500	mg/kg	0.0333	94.9	31-137
Anthracene	0.0307	0.00500	"	0.0333	92.1	30-120
Benzo (a) anthracene	0.0319	0.00500	"	0.0333	95.8	30-120
Benzo (a) pyrene	0.0279	0.00500	"	0.0333	83.7	30-120
Benzo (b) fluoranthene	0.0295	0.00500	"	0.0333	88.5	30-120
Benzo (k) fluoranthene	0.0277	0.00500	"	0.0333	83.0	30-120
Chrysene	0.0302	0.00500	"	0.0333	90.6	30-120
Dibenz (a,h) anthracene	0.0239	0.00500	"	0.0333	71.8	30-120
Fluoranthene	0.0297	0.00500	"	0.0333	89.2	30-120
Fluorene	0.0230	0.00500	"	0.0333	69.1	30-120
Indeno (1,2,3-cd) pyrene	0.0249	0.00500	"	0.0333	74.8	30-120
Pyrene	0.0318	0.00500	"	0.0333	95.3	35-142
1-Methylnaphthalene	0.0326	0.00500	"	0.0333	97.8	35-142
2-Methylnaphthalene	0.0292	0.00500	"	0.0333	87.5	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0347</i>		"	<i>0.0333</i>	<i>104</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0305</i>		"	<i>0.0333</i>	<i>91.6</i>	<i>40-150</i>

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**PAH by EPA Method 8270D SIM - Quality Control**

**Summit Scientific**

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

**Batch BHC0690 - EPA 5030 Soil MS**

**Matrix Spike (BHC0690-MS1)**

Source: 2403244-01

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

Acenaphthene	0.0155	0.00500	mg/kg	0.0333	ND	46.6	31-137			
Anthracene	0.0157	0.00500	"	0.0333	ND	47.2	30-120			
Benzo (a) anthracene	0.0163	0.00500	"	0.0333	ND	48.9	30-120			
Benzo (a) pyrene	0.0139	0.00500	"	0.0333	ND	41.6	30-120			
Benzo (b) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.6	30-120			
Benzo (k) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.9	30-120			
Chrysene	0.0147	0.00500	"	0.0333	ND	44.2	30-120			
Dibenz (a,h) anthracene	0.0141	0.00500	"	0.0333	ND	42.2	30-120			
Fluoranthene	0.0154	0.00500	"	0.0333	ND	46.2	30-120			
Fluorene	0.0140	0.00500	"	0.0333	ND	42.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0188	0.00500	"	0.0333	ND	56.3	30-120			
Pyrene	0.0162	0.00500	"	0.0333	ND	48.6	35-142			
1-Methylnaphthalene	0.0157	0.00500	"	0.0333	ND	47.1	15-130			
2-Methylnaphthalene	0.0148	0.00500	"	0.0333	ND	44.5	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0171		"	0.0333		51.3	40-150			
Surrogate: Fluoranthene-d10	0.0163		"	0.0333		49.0	40-150			

**Matrix Spike Dup (BHC0690-MSD1)**

Source: 2403244-01

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

Acenaphthene	0.0148	0.00500	mg/kg	0.0333	ND	44.4	31-137	4.81	30	
Anthracene	0.0139	0.00500	"	0.0333	ND	41.8	30-120	12.1	30	
Benzo (a) anthracene	0.0151	0.00500	"	0.0333	ND	45.4	30-120	7.45	30	
Benzo (a) pyrene	0.0146	0.00500	"	0.0333	ND	43.7	30-120	5.08	30	
Benzo (b) fluoranthene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	47.6	30	QR-02
Benzo (k) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.7	30-120	0.482	30	
Chrysene	0.0135	0.00500	"	0.0333	ND	40.6	30-120	8.58	30	
Dibenz (a,h) anthracene	0.0151	0.00500	"	0.0333	ND	45.3	30-120	7.07	30	
Fluoranthene	0.0138	0.00500	"	0.0333	ND	41.4	30-120	10.9	30	
Fluorene	0.0142	0.00500	"	0.0333	ND	42.6	30-120	1.19	30	
Indeno (1,2,3-cd) pyrene	0.0167	0.00500	"	0.0333	ND	50.0	30-120	11.9	30	
Pyrene	0.0147	0.00500	"	0.0333	ND	44.1	35-142	9.85	30	
1-Methylnaphthalene	0.0134	0.00500	"	0.0333	ND	40.1	15-130	16.1	50	
2-Methylnaphthalene	0.0136	0.00500	"	0.0333	ND	40.8	15-130	8.66	50	
Surrogate: 2-Methylnaphthalene-d10	0.0143		"	0.0333		42.9	40-150			
Surrogate: Fluoranthene-d10	0.0146		"	0.0333		43.8	40-150			

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

Project: Noble - Kissler K21-32D  
Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

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

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

**Batch BHC0676 - EPA 3050B**

**Blank (BHC0676-BLK1)**

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

Boron ND 2.00 mg/L

**LCS (BHC0676-BS1)**

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

Boron 4.00 2.00 mg/L 5.00 80.0 80-120

**Duplicate (BHC0676-DUP1)**

Source: 2403257-01

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

Boron 0.247 2.00 mg/L 0.285 14.0 20

**Matrix Spike (BHC0676-MS1)**

Source: 2403257-01

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

Boron 4.36 2.00 mg/L 5.00 0.285 81.6 75-125

**Matrix Spike Dup (BHC0676-MSD1)**

Source: 2403257-01

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

Boron 4.56 2.00 mg/L 5.00 0.285 85.6 75-125 4.46 25

Summit Scientific

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BHC0733 - EPA 3050B**

**Blank (BHC0733-BLK1)**

Prepared: 03/20/24 Analyzed: 04/19/24

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 (BHC0733-BS1)**

Prepared: 03/20/24 Analyzed: 04/19/24

Arsenic	48.2	0.200	mg/kg wet	40.0	120	80-120
Barium	44.2	0.400	"	40.0	110	80-120
Cadmium	2.02	0.200	"	2.00	101	80-120
Copper	44.3	0.400	"	40.0	111	80-120
Lead	20.9	0.200	"	20.0	104	80-120
Nickel	42.6	0.400	"	40.0	106	80-120
Silver	2.06	0.0200	"	2.00	103	80-120
Zinc	42.0	0.400	"	40.0	105	80-120
Selenium	4.73	0.260	"	4.00	118	80-120

**Duplicate (BHC0733-DUP1)**

Source: 2403195-01

Prepared: 03/20/24 Analyzed: 04/19/24

Arsenic	4.37	0.200	mg/kg dry	3.94	10.3	20
Barium	93.2	0.400	"	93.1	0.130	20
Cadmium	0.228	0.200	"	0.224	1.96	20
Copper	3.82	0.400	"	3.85	0.680	20
Lead	6.63	0.200	"	6.29	5.26	20
Nickel	ND	0.400	"	ND		20
Silver	0.0354	0.0200	"	0.0339	4.26	20
Zinc	18.8	0.400	"	18.8	0.160	20
Selenium	ND	0.260	"	ND		20

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BHC0733 - EPA 3050B**

**Matrix Spike (BHC0733-MS1)**

Source: 2403195-01

Prepared: 03/20/24 Analyzed: 04/19/24

Arsenic	63.7	0.200	mg/kg dry	49.2	3.94	121	75-125				
Barium	153	0.400	"	49.2	93.1	121	75-125				
Cadmium	2.85	0.200	"	2.46	0.224	107	75-125				
Copper	37.3	0.400	"	49.2	3.85	68.0	75-125				QM-05
Lead	32.2	0.200	"	24.6	6.29	105	75-125				
Nickel	54.3	0.400	"	49.2	ND	110	75-125				
Silver	2.59	0.0200	"	2.46	0.0339	104	75-125				
Zinc	50.4	0.400	"	49.2	18.8	64.2	75-125				QM-05
Selenium	5.85	0.260	"	4.92	ND	119	75-125				

**Matrix Spike Dup (BHC0733-MSD1)**

Source: 2403195-01

Prepared: 03/20/24 Analyzed: 04/19/24

Arsenic	64.4	0.200	mg/kg dry	49.2	3.94	123	75-125	1.07	25		
Barium	150	0.400	"	49.2	93.1	115	75-125	1.97	25		
Cadmium	2.72	0.200	"	2.46	0.224	102	75-125	4.66	25		
Copper	36.9	0.400	"	49.2	3.85	67.2	75-125	1.06	25		QM-05
Lead	31.3	0.200	"	24.6	6.29	102	75-125	2.74	25		
Nickel	54.9	0.400	"	49.2	ND	112	75-125	1.10	25		
Silver	2.53	0.0200	"	2.46	0.0339	101	75-125	2.52	25		
Zinc	49.6	0.400	"	49.2	18.8	62.5	75-125	1.65	25		QM-05
Selenium	5.83	0.260	"	4.92	ND	119	75-125	0.396	25		

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BHC0667 - 3060A Mod**

**Blank (BHC0667-BLK1)**

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

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BHC0667-BS1)**

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

Chromium, Hexavalent 25.2 0.30 mg/kg wet 25.0 101 80-120

**Duplicate (BHC0667-DUP1)**

**Source: 2403176-01**

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

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BHC0667-MS1)**

**Source: 2403176-01**

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

Chromium, Hexavalent 29.7 0.30 mg/kg dry 28.7 ND 103 75-125

**Matrix Spike Dup (BHC0667-MSD1)**

**Source: 2403176-01**

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

Chromium, Hexavalent 29.6 0.30 mg/kg dry 28.7 ND 103 75-125 0.388 20

Summit Scientific

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

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

**Summit Scientific**

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

**Batch BHC0955 - General Preparation**

**Blank (BHC0955-BLK1)**

Prepared: 03/25/24 Analyzed: 04/23/24

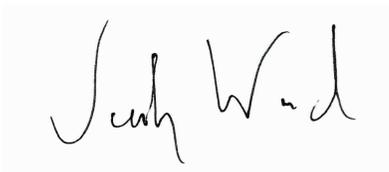
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

**LCS (BHC0955-BS1)**

Prepared: 03/25/24 Analyzed: 04/23/24

Calcium	5.78	0.0500	mg/L wet	5.00	116	70-130
Magnesium	4.88	0.0500	"	5.00	97.6	70-130
Sodium	4.98	0.0500	"	5.00	99.7	70-130

Summit Scientific



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

Project: Noble - Kissler K21-32D  
 Project Number: UWRWE-A2454-ABN  
 Project Manager: Jacob Whritenour

**Reported:**  
 04/24/24 13:40

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

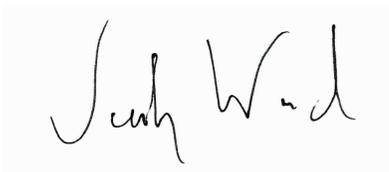
**Summit Scientific**

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

**Batch BHC0659 - General Preparation**

<b>Duplicate (BHC0659-DUP1)</b>		<b>Source: 2403235-01</b>		Prepared: 03/19/24 Analyzed: 03/21/24	
% Solids	80.5	%		82.4	2.43 20

Summit Scientific



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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

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

**Summit Scientific**

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

**Batch BHC0956 - General Preparation**

**Blank (BHC0956-BLK1)**

Prepared: 03/25/24 Analyzed: 03/29/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHC0956-BS1)**

Prepared: 03/25/24 Analyzed: 03/29/24

Specific Conductance (EC) 0.152 0.0100 mmhos/cm 0.150 102 95-105

**Duplicate (BHC0956-DUP1)**

**Source: 2403150-01**

Prepared: 03/25/24 Analyzed: 03/29/24

Specific Conductance (EC) 0.251 0.0100 mmhos/cm 0.256 2.13 20

Summit Scientific

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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

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

**Summit Scientific**

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

**Batch BHC0957 - General Preparation**

**LCS (BHC0957-BS1)**

Prepared: 03/25/24 Analyzed: 03/29/24

pH	9.03	pH Units	9.18	98.4	95-105
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**Duplicate (BHC0957-DUP1)**

Source: 2403150-01

Prepared: 03/25/24 Analyzed: 03/29/24

pH	7.23	pH Units	7.18	0.694	20
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Summit Scientific



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

Project: Noble - Kissler K21-32D

Project Number: UWRWE-A2454-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
04/24/24 13:40

### Notes and Definitions

- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- 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