



Third Party														
Removal Date														
Sample taken?														
PID Readings														
Photo Number(s)														
Other Facility Equipment														
Equipment type	Meter House	Flare												
Equipment Condition														
Age														
Soil impacts observed during	None observed	None observed												
PID Readings	0.6	0.5												
Sample taken?	Yes, see below	Yes, see below												
Photo Number(s)	7	8												
Other observations regarding other facility or third party equipment:														
Samples were taken at the meter house on site (MH01@0.5') and at the flare stack (FLARE01@0.5').														
Summary														
Was impacted soil identified?														
<div> <div>No</div> <div>Yes - less than 10 cubic yards</div> <div>Yes - more than 10 cubic yards</div> </div>														
Total number of samples field screened: 9					Total number of samples collected: 9									
Highest PID Reading: 1,008					Total number of samples submitted to lab for analysis: 7									
If more than 10 cubic yards of impacted soil were observed:														
Vertical extent:					Estimated spill volume:									
Lateral extent:					Volume of soil removed:									
Is additional investigation required?														
Was groundwater encountered during the investigation?														
<div> <div>No</div> <div>Yes - not impacted or in contact with impacted soils</div> <div>Yes - groundwater impacted and/or in contact with impacted soils</div> </div>														
Measured depth to groundwater:					Was remedial groundwater removal conducted? Yes No									
Date Groundwater was encountered:					Commencement date of removal:									
Sheen on groundwater? Yes No					Volume of groundwater removed prior to sampling:									
Free product observed? Yes No					Volume of groundwater removed post sampling:									
Total number of samples collected:					Total Volume of groundwater removed:									
Total number of samples submitted to lab for analysis:														



Photographic Log

											
Equipment ID: AST01 @ 0.5'		Equipment Type: Above Ground Storage Tank		Equipment ID: SS01 @ 2.5'		Equipment Type: Partially Buried Vault					
Material: Steel		Volume:		Contents: Crude Oil		Material: Concrete		Volume:		Contents: Produced Water	
Notes/Conditions: Facing East						Notes/Conditions: Facing North					



Photographic Log

							
Equipment ID: SS02@2.5'		Equipment Type: Partially Buried Vault		Equipment ID: SS03@2.5'		Equipment Type: Partially Buried Vault	
Material: Concrete		Volume:		Material: Concrete		Volume:	
		Contents: Produced Water				Contents: Produced Water	
Notes/Conditions: Facing East				Notes/Conditions: Facing South			

Photographic Log

					
Equipment ID: SS04@2.5'		Equipment Type: Partially Buried Vault		Equipment ID: FS01@5'	
Material: Concrete		Volume:	Contents: Produced Water	Equipment Type: Partially Buried Vault	
Material: Steel		Volume:	Contents: Produced Water		
Notes/Conditions: Facing West			Notes/Conditions: Facing North		

Photographic Log

							
Equipment ID: MH01 @0.5'		Equipment Type: Meter House		Equipment ID: Flare01 @0.5'		Equipment Type: Flare	
Material: Steel		Volume:		Material: Steel		Volume:	
Contents:		Contents:		Contents: Oil/Gas/Water		Contents:	
Notes/Conditions: Facing Southwest				Notes/Conditions: Facing North			

Photographic Log


											
						Equipment ID: SEP01-DL@3'		Equipment Type: Dump Line			
						Material: Steel		Volume:		Contents: Production Fluids	
						Notes/Conditions: Facing North					
			Equipment ID:			Equipment Type:					
			Material:			Volume:			Contents:		
						Notes/Conditions:					

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - MATSUSHIMA-PM K 2-1

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
AST01@0.5'	10/06/23	0.6	No Staining	No Odor	Lab	40.34716267	-104.7372930	1.0
FLARE01@0.5'	10/06/23	0.5	No Staining	No Odor	Grab	40.34711713	-104.7375705	0.8
FS01@5'	10/06/23	1,008	No Staining	Strong HC Odor	Lab	40.34715169	-104.7373634	1.0
MH01@0.5'	10/06/23	0.6	No Staining	No Odor	Grab	40.34708907	-104.7374830	1.1
SEP01-DL@3'	10/06/23	1.0	No Staining	No Odor	Lab	40.34710578	-104.7374826	0.9
SS01@2.5'	10/06/23	5.6	No Staining	Slight HC Odor	Lab	40.34716778	-104.7373662	1.2
SS02@2.5'	10/06/23	3.3	No Staining	No Odor	Lab	40.34715423	-104.7373333	1.1
SS03@2.5'	10/06/23	3.4	No Staining	No Odor	Lab	40.34712999	-104.7373440	1.0
SS04@2.5'	10/06/23	1.0	No Staining	No Odor	Lab	40.34714045	-104.7373752	1.1

Notes:

PID = Photoionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

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

TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - MATSUSHIMA-PMK 2-1

Soil Sample ID	Date	¹ Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ²		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^{2,3}		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
AST01@0.5'	10/06/23	<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@5'	10/06/23	<0.0020	<0.0050	<0.0050	<0.010	11	<0.0050	0.054	450	120	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0206	<0.00500	<0.00500	0.228	0.269
SEP01-DL@3'	10/06/23	<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
SS01@2.5'	10/06/23	<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
SS02@2.5'	10/06/23	<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
SS03@2.5'	10/06/23	<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
SS04@2.5'	10/06/23	<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

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
AST01@0.5'	10/06/23	7.88	0.0534	0.127	<2.00
FS01@5'	10/06/23	7.98	0.736	0.421	<2.00
SEP01-DL@3'	10/06/23	8.06	0.275	0.202	<2.00
SS01@2.5'	10/06/23	7.85	0.285	0.186	<2.00
SS02@2.5'	10/06/23	7.81	0.417	0.161	<2.00
SS03@2.5'	10/06/23	8.51	0.654	0.217	<2.00
SS04@2.5'	10/06/23	8.54	1.09	0.234	<2.00

Soil Sample ID	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ²		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^{2,3}		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
AST01@0.5'	10/06/23	1.43	203	0.571	<0.30	5.95	27.2	2.82	0.279	0.271	27.2
FS01@5'	10/06/23	0.368	52.9	<0.200	<0.30	0.922	3.63	1.00	<0.260	<0.0200	5.40
SEP01-DL@3'	10/06/23	1.34	208	0.414	<0.30	4.80	18.1	2.50	0.330	0.275	18.5
SS01@2.5'	10/06/23	1.20	179	0.403	<0.30	3.91	18.9	2.34	0.289	0.187	15.5
SS02@2.5'	10/06/23	3.19	172	0.351	<0.30	7.93	11.0	6.15	<0.260	0.0582	28.6
SS03@2.5'	10/06/23	3.50	125	0.371	<0.30	9.90	16.1	5.28	<0.260	0.147	36.8
SS04@2.5'	10/06/23	3.95	114	0.330	<0.30	8.77	12.2	6.53	0.284	0.0625	27.2

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 Chemical Contaminants at Superfund Sites, effective November 2020.

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 = Millmhos per centimeter

mg/L = Milligrams per liter

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

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

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

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

Benz(a) = Benzo(a)anthracene

Benzo(b) = Benzo(b)fluoranthene

Benzo(k) = Benzo(k)fluoranthene

Benzo(a) = Benzo(a)pyrene

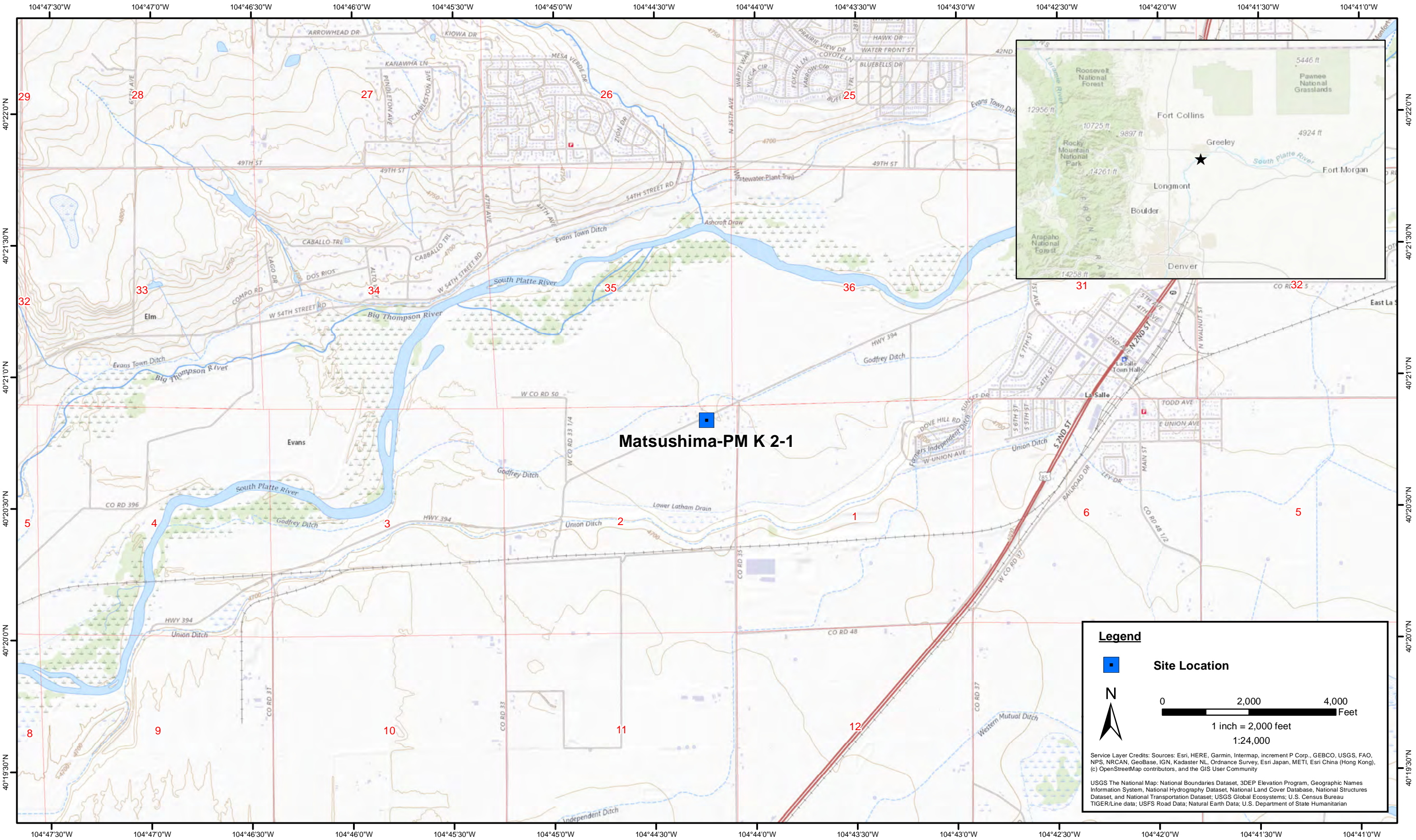
A,H = Dibenzo(a,h)anthracene

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

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

RP = Results Pending



DATE:
October 2023

DESIGNED BY:
J. Whritenour

DRAWN BY:
L. Reed



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

Noble Energy, Inc - DJ Basin
Matsushima-PM K 2-1
NENE, Section 2, Township 4 North, Range 66 West
Weld County, Colorado

Site Location Map

Figure
1



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 08, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.


Broomfield, CO 80020

RE: Noble - Matsushima-PM K 2-1

Work Order #2310140

Enclosed are the results of analyses for samples received by Summit Scientific on 10/06/23 17:48. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN

Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0.5'	2310140-01	Soil	10/06/23 10:02	10/06/23 17:48
SS01@2.5'	2310140-02	Soil	10/06/23 10:06	10/06/23 17:48
SS02@2.5'	2310140-03	Soil	10/06/23 10:10	10/06/23 17:48
SS03@2.5'	2310140-04	Soil	10/06/23 10:12	10/06/23 17:48
SS04@2.5'	2310140-05	Soil	10/06/23 10:16	10/06/23 17:48
FS01@5'	2310140-06	Soil	10/06/23 10:21	10/06/23 17:48
SEP01-DL@3'	2310140-07	Soil	10/06/23 10:27	10/06/23 17:48

Case Narrative

Hunter Merlo requested full Table 915 be run for SS02@2.5', SS03@2.5', & SS04@2.5' on 10/23/2023.
This report includes those results.

Summit Scientific

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

SUMMIT SCIENTIFIC

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

Lab ID	Page	of
2310140		1

Client: Noble / Tasman		Send Data To:	Send Invoice To:
Address: 6855 W. 119th Ave		Project Manager: Jake Whritenour	Company: Chevron
City/State/Zip: Broomfield, CO 80020		E-Mail: jwhritenour@tasman-geo.com	Project Name/Location: Matsushima PMK 2-01
Phone: 303-903-5168		Project Name: Matsushima PMK 2-01	AFE#: UWRWE-A1966-ABN
Sampler Name: Dalton Hagen		Project Number:	PO/Billing Codes:
		Contact: Miguel Barron	

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	VOC - 915	TPH - 915	PAH - 915	pH,EC,SAR	Boron - HWS	Metals - 915	HOLD			pH, EC, SAR by saturated paste
1	AST01 @ 0.5'	10/6/23	1002	3			X			X			X	X	X	X	X	X				
2	SS01 @ 2.5'	I	1006	I			I			I			X	X	X	X	X	X				
3	SS02 @ 2.5'	I	1010	I			I			I									X			
4	SS03 @ 2.5'	I	1012	I			I			I									X			
5	SS04 @ 2.5'	I	1016	I			I			I									X			
6	FS01 @ 5'	I	1021	I			I			I			X	X	X	X	X	X				
7	SEP01 - 0LE3'	I	1027	I			I			I			X	X	X	X	X	X				
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by:	Date/Time: 10/6/23 1500	Received by: Tasman Lockbox	Date/Time: 10/6/23 1500	TAT Business Days	Field DO	Notes:
Relinquished by:	Date/Time: 10/6/23 1748	Received by:	Date/Time: 10/6/23 1748	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 14.9	Corrected Temperature:	IR gun #:		Standard	X Field Turb.	
				HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2310140Client: Nobu Tasman Client Project ID: Matsushima Pmk 2-01Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #:

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

Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 14.9Thermometer # 1

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

Additional Comments (if any):

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

10/6/23
Date/Time



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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

AST01@0.5'
2310140-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGJ0441	10/11/23	10/12/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0334	83.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0486	122 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0408	102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGJ0461	10/11/23	10/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.13	73.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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 - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

AST01@0.5'
2310140-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0525	10/12/23	10/13/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0273	81.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0143	42.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ0503	10/12/23	10/12/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

AST01@0.5'
2310140-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.43	0.200	mg/kg dry	1	BGJ0473	10/11/23	10/13/23	EPA 6020B
Barium	203	0.400	"	"	"	"	"	"
Cadmium	0.571	0.200	"	"	"	"	"	"
Copper	5.95	0.400	"	"	"	"	"	"
Nickel	2.82	0.400	"	"	"	"	"	"
Silver	0.271	0.0200	"	"	"	"	"	"
Zinc	27.2	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0470	10/11/23	10/12/23	EPA 7196A	

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

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	71.7	0.0500	mg/L dry	1	BGJ0574	10/13/23	10/18/23	EPA 6020B	
Magnesium	14.1	0.0500	"	"	"	"	"	"	
Sodium	1.89	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0534	0.00100	units	1	BGJ0719	10/18/23	10/18/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.8		%	1	BGJ0549	10/13/23	10/13/23	Calculation	

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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

AST01@0.5'
2310140-01 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.127	0.0100		mmhos/cm	1	BGJ0593	10/16/23	10/17/23	EPA 120.1	

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Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

AST01@0.5'
2310140-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Lead	27.2	0.200		mg/kg dry	1	BGJ1129	10/11/23	10/30/23	EPA 6020B	
Selenium	0.279	0.260		"	"	"	"	"	"	

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

Date Sampled: **10/06/23 10:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.88			pH Units	1	BGJ0911	10/16/23	10/23/23	EPA 9045D	

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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS01@2.5'
2310140-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/23 10:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ0441	10/11/23	10/12/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0337	84.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0488	122 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/06/23 10:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0461	10/11/23	10/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:06**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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6855 W. 119th Ave.
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Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS01@2.5'
2310140-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/06/23 10:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0525	10/12/23	10/13/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0440	132 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0189	56.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/06/23 10:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0503	10/12/23	10/12/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/06/23 10:06**

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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS01@2.5'
2310140-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.20	0.200	mg/kg dry	1	BGJ0473	10/11/23	10/13/23	EPA 6020B
Barium	179	0.400	"	"	"	"	"	"
Cadmium	0.403	0.200	"	"	"	"	"	"
Copper	3.91	0.400	"	"	"	"	"	"
Lead	18.9	0.200	"	"	"	"	"	"
Nickel	2.34	0.400	"	"	"	"	"	"
Silver	0.187	0.0200	"	"	"	"	"	"
Zinc	15.5	0.400	"	"	"	"	"	"
Selenium	0.289	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/06/23 10:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0470	10/11/23	10/12/23	EPA 7196A	

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

Date Sampled: **10/06/23 10:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	47.8	0.0500	mg/L dry	1	BGJ0574	10/13/23	10/18/23	EPA 6020B	
Magnesium	8.37	0.0500	"	"	"	"	"	"	
Sodium	8.11	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/06/23 10:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.285	0.00100	units	1	BGJ0719	10/18/23	10/18/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/06/23 10:06**

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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN

Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS01@2.5'
2310140-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.0	%	1	BGJ0549	10/13/23	10/13/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/06/23 10:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.186	0.0100	mmhos/cm	1	BGJ0593	10/16/23	10/17/23	EPA 120.1	

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS01@2.5'
2310140-02 (Soil)

Summit Scientific

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

Date Sampled: **10/06/23 10:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.85			pH Units	1	BGJ0911	10/16/23	10/23/23	EPA 9045D	

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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS02@2.5'
2310140-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

I-04

Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0941	10/24/23	10/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0289	72.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0332	83.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0342	85.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

I-04

Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0942	10/24/23	10/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	


Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.7	101 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

I-04

Summit Scientific



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Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS02@2.5'
2310140-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

I-04

Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0916	10/24/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0143	42.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0177	53.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1237	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/06/23 10:10**

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS02@2.5'
2310140-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.19	0.200	mg/kg dry	1	BGJ1173	10/30/23	10/31/23	EPA 6020B
Barium	172	0.400	"	"	"	"	"	"
Cadmium	0.351	0.200	"	"	"	"	"	"
Copper	7.93	0.400	"	"	"	"	"	"
Lead	11.0	0.200	"	"	"	"	"	"
Nickel	6.15	0.400	"	"	"	"	"	"
Silver	0.0582	0.0200	"	"	"	"	"	"
Zinc	28.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1089	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	45.0	0.0500	mg/L dry	1	BGJ1086	10/26/23	10/31/23	EPA 6020B	
Magnesium	20.1	0.0500	"	"	"	"	"	"	
Sodium	13.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.417	0.00100	units	1	BGK0018	11/01/23	11/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/06/23 10:10**

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS02@2.5'
2310140-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	78.4	%	1	BGJ1242	10/31/23	10/31/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.161	0.0100	mmhos/cm	1	BGJ1105	10/27/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/06/23 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.81		pH Units	1	BGJ0911	10/16/23	10/23/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS03@2.5'
2310140-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

I-04

Date Sampled: **10/06/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0941	10/24/23	10/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0291	72.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0347	86.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0344	86.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

I-04

Date Sampled: **10/06/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0942	10/24/23	10/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.4	115 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

I-04

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS03@2.5'
2310140-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

I-04

Date Sampled: **10/06/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0916	10/24/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0172	51.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0243	72.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/06/23 10:12**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1237	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/06/23 10:12**

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS03@2.5'
2310140-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.50	0.200	mg/kg dry	1	BGJ1173	10/30/23	10/31/23	EPA 6020B
Barium	125	0.400	"	"	"	"	"	"
Cadmium	0.371	0.200	"	"	"	"	"	"
Copper	9.90	0.400	"	"	"	"	"	"
Lead	16.1	0.200	"	"	"	"	"	"
Nickel	5.28	0.400	"	"	"	"	"	"
Silver	0.147	0.0200	"	"	"	"	"	"
Zinc	36.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/06/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1089	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/06/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	45.3	0.0500	mg/L dry	1	BGJ1086	10/26/23	10/31/23	EPA 6020B	
Magnesium	10.1	0.0500	"	"	"	"	"	"	
Sodium	18.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/06/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.654	0.00100	units	1	BGK0018	11/01/23	11/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/06/23 10:12**

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS03@2.5'
2310140-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.9	%	1	BGJ1242	10/31/23	10/31/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/06/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.217	0.0100	mmhos/cm	1	BGJ1105	10/27/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/06/23 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.51		pH Units	1	BGJ1103	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS04@2.5'
2310140-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

I-04

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ0941	10/24/23	10/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0304	76.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0338	84.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0342	85.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

I-04

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0942	10/24/23	10/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.5	108 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

I-04

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS04@2.5'
2310140-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

I-04

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0916	10/24/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0155	46.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0144	43.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1237	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/06/23 10:16**

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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS04@2.5'
2310140-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.95	0.200	mg/kg dry	1	BGJ1173	10/30/23	10/31/23	EPA 6020B
Barium	114	0.400	"	"	"	"	"	"
Cadmium	0.330	0.200	"	"	"	"	"	"
Copper	8.77	0.400	"	"	"	"	"	"
Lead	12.2	0.200	"	"	"	"	"	"
Nickel	6.53	0.400	"	"	"	"	"	"
Silver	0.0625	0.0200	"	"	"	"	"	"
Zinc	27.2	0.400	"	"	"	"	"	"
Selenium	0.284	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1089	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	46.1	0.0500	mg/L dry	1	BGJ1086	10/26/23	10/31/23	EPA 6020B	
Magnesium	17.9	0.0500	"	"	"	"	"	"	
Sodium	34.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.09	0.00100	units	1	BGK0018	11/01/23	11/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/06/23 10:16**

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SS04@2.5'
2310140-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	80.0	%	1	BGJ1242	10/31/23	10/31/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.234	0.0100	mmhos/cm	1	BGJ1105	10/27/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/06/23 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.54		pH Units	1	BGJ1103	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

FS01@5'
2310140-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ0441	10/11/23	10/12/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	11	0.50	"	100	"	"	10/12/23	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	1	"	"	10/12/23	"	
Naphthalene	0.054	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	450	50	"	100	"	"	10/12/23	"	

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0305	76.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0574	143 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	120	50	mg/kg	1	BGJ0461	10/11/23	10/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.83	78.6 %	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 - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

FS01@5'
2310140-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0525	10/12/23	10/13/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0206	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.228	0.00500	"	"	"	"	"	"	E
2-Methylnaphthalene	0.269	0.00500	"	"	"	"	"	"	E

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0283	84.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0239	71.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0503	10/12/23	10/12/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/06/23 10:21**

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 - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

FS01@5'
2310140-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.368	0.200	mg/kg dry	1	BGJ0473	10/11/23	10/13/23	EPA 6020B
Barium	52.9	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	0.922	0.400	"	"	"	"	"	"
Lead	3.63	0.200	"	"	"	"	"	"
Nickel	1.00	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	5.40	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0470	10/11/23	10/12/23	EPA 7196A	

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

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	268	0.0500	mg/L dry	1	BGJ0574	10/13/23	10/18/23	EPA 6020B	
Magnesium	58.2	0.0500	"	"	"	"	"	"	
Sodium	51.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.736	0.00100	units	1	BGJ0719	10/18/23	10/18/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

FS01@5'
2310140-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.3		%	1	BGJ0549	10/13/23	10/13/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.421	0.0100	mmhos/cm	1	BGJ0593	10/16/23	10/17/23	EPA 120.1	

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

Date Sampled: **10/06/23 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.98		pH Units	1	BGJ0592	10/16/23	10/17/23	EPA 9045D	

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Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SEP01-DL@3'
2310140-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ0441	10/11/23	10/12/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0342	85.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0505	126 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0441	110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0461	10/11/23	10/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.03	72.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SEP01-DL@3'
2310140-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0525	10/12/23	10/13/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0197	59.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0145	43.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/06/23 10:27**

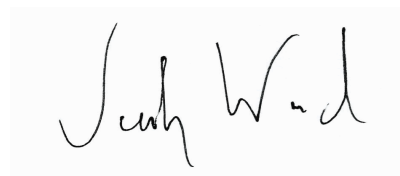
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0503	10/12/23	10/12/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/06/23 10:27**

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 - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SEP01-DL@3'
2310140-07 (Soil)

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Total Metals by EPA 6020B

Arsenic	1.34	0.200	mg/kg dry	1	BGJ0473	10/11/23	10/13/23	EPA 6020B
Barium	208	0.400	"	"	"	"	"	"
Copper	4.80	0.400	"	"	"	"	"	"
Nickel	2.50	0.400	"	"	"	"	"	"
Silver	0.275	0.0200	"	"	"	"	"	"
Zinc	18.5	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0470	10/11/23	10/12/23	EPA 7196A	

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

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	46.7	0.0500	mg/L dry	1	BGJ0574	10/13/23	10/18/23	EPA 6020B	
Magnesium	15.5	0.0500	"	"	"	"	"	"	
Sodium	8.48	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.275	0.00100	units	1	BGJ0719	10/18/23	10/18/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	75.4		%	1	BGJ0549	10/13/23	10/13/23	Calculation	

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Broomfield CO, 80020

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SEP01-DL@3'
2310140-07 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.202	0.0100		mmhos/cm	1	BGJ0593	10/16/23	10/17/23	EPA 120.1	

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Broomfield CO, 80020

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

SEP01-DL@3'
2310140-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Cadmium	0.414	0.200	mg/kg dry	1	BGJ1129	10/11/23	10/30/23	EPA 6020B	
Lead	18.1	0.200	"	"	"	"	"	"	
Selenium	0.330	0.260	"	"	"	"	"	"	

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

Date Sampled: **10/06/23 10:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.06		pH Units	1	BGK0227	10/16/23	11/07/23	EPA 9045D	

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Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGJ0441 - EPA 5030 Soil MS

Blank (BGJ0441-BLK1)

Prepared: 10/11/23 Analyzed: 10/12/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0315		"	0.0400		78.7	50-150			
Surrogate: Toluene-d8	0.0502		"	0.0400		125	50-150			
Surrogate: 4-Bromofluorobenzene	0.0434		"	0.0400		108	50-150			

LCS (BGJ0441-BS1)

Prepared: 10/11/23 Analyzed: 10/12/23

Benzene	0.0953	0.0020	mg/kg	0.100		95.3	70-130			
Toluene	0.127	0.0050	"	0.100		127	70-130			
Ethylbenzene	0.111	0.0050	"	0.100		111	70-130			
m,p-Xylene	0.227	0.010	"	0.200		113	70-130			
o-Xylene	0.102	0.0050	"	0.100		102	70-130			
1,2,4-Trimethylbenzene	0.0998	0.0050	"	0.100		99.8	70-130			
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100		105	70-130			
Naphthalene	0.0914	0.0038	"	0.100		91.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0334		"	0.0400		83.4	50-150			
Surrogate: Toluene-d8	0.0495		"	0.0400		124	50-150			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	50-150			

Matrix Spike (BGJ0441-MS1)

Source: 2310140-01

Prepared: 10/11/23 Analyzed: 10/12/23

Benzene	0.0827	0.0020	mg/kg	0.100	ND	82.7	70-130			
Toluene	0.101	0.0050	"	0.100	ND	101	70-130			
Ethylbenzene	0.0864	0.0050	"	0.100	ND	86.4	70-130			
m,p-Xylene	0.173	0.010	"	0.200	ND	86.3	70-130			
o-Xylene	0.0766	0.0050	"	0.100	ND	76.6	70-130			
1,2,4-Trimethylbenzene	0.0978	0.0050	"	0.100	ND	97.8	70-130			
1,3,5-Trimethylbenzene	0.0731	0.0050	"	0.100	ND	73.1	70-130			
Naphthalene	0.103	0.0038	"	0.100	ND	103	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0337		"	0.0400		84.2	50-150			
Surrogate: Toluene-d8	0.0476		"	0.0400		119	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	50-150			

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

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

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

Batch BGJ0441 - EPA 5030 Soil MS

Matrix Spike Dup (BGJ0441-MSD1)

Source: 2310140-01

Prepared: 10/11/23 Analyzed: 10/12/23

Benzene	0.0765	0.0020	mg/kg	0.100	ND	76.5	70-130	7.80	30	
Toluene	0.0854	0.0050	"	0.100	ND	85.4	70-130	16.8	30	
Ethylbenzene	0.0761	0.0050	"	0.100	ND	76.1	70-130	12.6	30	
m,p-Xylene	0.155	0.010	"	0.200	ND	77.6	70-130	10.7	30	
o-Xylene	0.0993	0.0050	"	0.100	ND	99.3	70-130	25.7	30	
1,2,4-Trimethylbenzene	0.0933	0.0050	"	0.100	ND	93.3	70-130	4.68	30	
1,3,5-Trimethylbenzene	0.0972	0.0050	"	0.100	ND	97.2	70-130	28.3	30	
Naphthalene	0.100	0.0038	"	0.100	ND	100	70-130	2.43	30	
Surrogate: 1,2-Dichloroethane-d4	0.0308		"	0.0400		77.0	50-150			
Surrogate: Toluene-d8	0.0440		"	0.0400		110	50-150			
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0400		95.2	50-150			

Batch BGJ0941 - EPA 5030 Soil MS

Blank (BGJ0941-BLK1)

Prepared: 10/24/23 Analyzed: 10/25/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0286		"	0.0400		71.6	50-150			
Surrogate: Toluene-d8	0.0343		"	0.0400		85.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0348		"	0.0400		86.9	50-150			

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGJ0941 - EPA 5030 Soil MS

LCS (BGJ0941-BS1)

Prepared: 10/24/23 Analyzed: 10/25/23

Benzene	0.101	0.0020	mg/kg	0.100		101	70-130			
Toluene	0.0821	0.0050	"	0.100		82.1	70-130			
Ethylbenzene	0.0894	0.0050	"	0.100		89.4	70-130			
m,p-Xylene	0.187	0.010	"	0.200		93.3	70-130			
o-Xylene	0.0910	0.0050	"	0.100		91.0	70-130			
1,2,4-Trimethylbenzene	0.0894	0.0050	"	0.100		89.4	70-130			
1,3,5-Trimethylbenzene	0.0907	0.0050	"	0.100		90.7	70-130			
Naphthalene	0.0770	0.0038	"	0.100		77.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0292		"	0.0400		73.0	50-150			
Surrogate: Toluene-d8	0.0332		"	0.0400		83.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0343		"	0.0400		85.6	50-150			

Matrix Spike (BGJ0941-MS1)

Source: 2310419-01

Prepared: 10/24/23 Analyzed: 10/25/23

Benzene	0.0955	0.0020	mg/kg	0.100	ND	95.5	70-130			
Toluene	0.0776	0.0050	"	0.100	ND	77.6	70-130			
Ethylbenzene	0.0853	0.0050	"	0.100	ND	85.3	70-130			
m,p-Xylene	0.176	0.010	"	0.200	ND	88.1	70-130			
o-Xylene	0.0833	0.0050	"	0.100	ND	83.3	70-130			
1,2,4-Trimethylbenzene	0.0807	0.0050	"	0.100	ND	80.7	70-130			
1,3,5-Trimethylbenzene	0.0824	0.0050	"	0.100	ND	82.4	70-130			
Naphthalene	0.0777	0.0038	"	0.100	ND	77.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0302		"	0.0400		75.4	50-150			
Surrogate: Toluene-d8	0.0335		"	0.0400		83.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0352		"	0.0400		87.9	50-150			

Matrix Spike Dup (BGJ0941-MSD1)

Source: 2310419-01

Prepared: 10/24/23 Analyzed: 10/25/23

Benzene	0.0970	0.0020	mg/kg	0.100	ND	97.0	70-130	1.56	30	
Toluene	0.0819	0.0050	"	0.100	ND	81.9	70-130	5.42	30	
Ethylbenzene	0.0859	0.0050	"	0.100	ND	85.9	70-130	0.701	30	
m,p-Xylene	0.179	0.010	"	0.200	ND	89.6	70-130	1.72	30	
o-Xylene	0.0862	0.0050	"	0.100	ND	86.2	70-130	3.40	30	
1,2,4-Trimethylbenzene	0.0838	0.0050	"	0.100	ND	83.8	70-130	3.72	30	
1,3,5-Trimethylbenzene	0.0857	0.0050	"	0.100	ND	85.7	70-130	4.00	30	
Naphthalene	0.0792	0.0038	"	0.100	ND	79.2	70-130	1.91	30	
Surrogate: 1,2-Dichloroethane-d4	0.0296		"	0.0400		74.0	50-150			
Surrogate: Toluene-d8	0.0346		"	0.0400		86.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0346		"	0.0400		86.6	50-150			

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGJ0461 - EPA 3550A

Blank (BGJ0461-BLK1)

Prepared & Analyzed: 10/11/23

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

LCS (BGJ0461-BS1)

Prepared & Analyzed: 10/11/23

C10-C28 (DRO)	528	50	mg/kg	500		106	70-130			
Surrogate: o-Terphenyl	13.3		"	12.5		106	30-150			

Matrix Spike (BGJ0461-MS1)

Source: 2310140-01

Prepared & Analyzed: 10/11/23

C10-C28 (DRO)	522	50	mg/kg	500	ND	104	70-130			
Surrogate: o-Terphenyl	10.2		"	12.5		81.8	30-150			

Matrix Spike Dup (BGJ0461-MSD1)

Source: 2310140-01

Prepared & Analyzed: 10/11/23

C10-C28 (DRO)	516	50	mg/kg	500	ND	103	70-130	1.05	20	
Surrogate: o-Terphenyl	9.40		"	12.5		75.2	30-150			

Batch BGJ0942 - EPA 3550A

Blank (BGJ0942-BLK1)

Prepared & Analyzed: 10/24/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	17.1		"	12.5		137	30-150			

LCS (BGJ0942-BS1)

Prepared & Analyzed: 10/24/23

C10-C28 (DRO)	452	50	mg/kg	500		90.4	70-130			
Surrogate: o-Terphenyl	15.4		"	12.5		123	30-150			

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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGJ0942 - EPA 3550A

Matrix Spike (BGJ0942-MS1)		Source: 2310419-01			Prepared & Analyzed: 10/24/23					
C10-C28 (DRO)	416	50	mg/kg	500	29.6	77.3	70-130			
Surrogate: o-Terphenyl	10.6		"	12.5		84.8	30-150			
Matrix Spike Dup (BGJ0942-MSD1)		Source: 2310419-01			Prepared & Analyzed: 10/24/23					
C10-C28 (DRO)	468	50	mg/kg	500	29.6	87.6	70-130	11.7	20	
Surrogate: o-Terphenyl	9.40		"	12.5		75.2	30-150			

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Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGJ0525 - EPA 5030 Soil MS

Blank (BGJ0525-BLK1)

Prepared: 10/12/23 Analyzed: 10/13/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0275		"	0.0333		82.6	40-150			
Surrogate: Fluoranthene-d10	0.0311		"	0.0333		93.2	40-150			

LCS (BGJ0525-BS1)

Prepared: 10/12/23 Analyzed: 10/13/23

Acenaphthene	0.0316	0.00500	mg/kg	0.0333	94.7	31-137	
Anthracene	0.0302	0.00500	"	0.0333	90.6	30-120	
Benzo (a) anthracene	0.0195	0.00500	"	0.0333	58.4	30-120	
Benzo (a) pyrene	0.0289	0.00500	"	0.0333	86.7	30-120	
Benzo (b) fluoranthene	0.0275	0.00500	"	0.0333	82.5	30-120	
Benzo (k) fluoranthene	0.0317	0.00500	"	0.0333	95.2	30-120	
Chrysene	0.0319	0.00500	"	0.0333	95.6	30-120	
Dibenz (a,h) anthracene	0.0276	0.00500	"	0.0333	82.7	30-120	
Fluoranthene	0.0329	0.00500	"	0.0333	98.7	30-120	
Fluorene	0.0333	0.00500	"	0.0333	100	30-120	
Indeno (1,2,3-cd) pyrene	0.0295	0.00500	"	0.0333	88.4	30-120	
Pyrene	0.0343	0.00500	"	0.0333	103	35-142	
1-Methylnaphthalene	0.0256	0.00500	"	0.0333	76.7	35-142	
2-Methylnaphthalene	0.0295	0.00500	"	0.0333	88.6	35-142	
Surrogate: 2-Methylnaphthalene-d10	0.0311		"	0.0333	93.3	40-150	
Surrogate: Fluoranthene-d10	0.0332		"	0.0333	99.5	40-150	

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Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BGJ0525 - EPA 5030 Soil MS

Matrix Spike (BGJ0525-MS1)

Source: 2310140-01

Prepared: 10/12/23 Analyzed: 10/13/23

Acenaphthene	0.0222	0.00500	mg/kg	0.0333	ND	66.7	31-137		
Anthracene	0.0213	0.00500	"	0.0333	ND	63.8	30-120		
Benzo (a) anthracene	0.0173	0.00500	"	0.0333	ND	51.8	30-120		
Benzo (a) pyrene	0.0245	0.00500	"	0.0333	ND	73.5	30-120		
Benzo (b) fluoranthene	0.0233	0.00500	"	0.0333	ND	69.8	30-120		
Benzo (k) fluoranthene	0.0243	0.00500	"	0.0333	ND	73.0	30-120		
Chrysene	0.0245	0.00500	"	0.0333	ND	73.5	30-120		
Dibenz (a,h) anthracene	0.0267	0.00500	"	0.0333	ND	80.0	30-120		
Fluoranthene	0.0265	0.00500	"	0.0333	ND	79.4	30-120		
Fluorene	0.0232	0.00500	"	0.0333	ND	69.7	30-120		
Indeno (1,2,3-cd) pyrene	0.0263	0.00500	"	0.0333	ND	79.0	30-120		
Pyrene	0.0284	0.00500	"	0.0333	ND	85.2	35-142		
1-Methylnaphthalene	0.0216	0.00500	"	0.0333	ND	64.8	15-130		
2-Methylnaphthalene	0.0212	0.00500	"	0.0333	ND	63.5	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0247		"	0.0333		74.1	40-150		
Surrogate: Fluoranthene-d10	0.0227		"	0.0333		68.2	40-150		

Matrix Spike Dup (BGJ0525-MSD1)

Source: 2310140-01

Prepared: 10/12/23 Analyzed: 10/13/23

Acenaphthene	0.0167	0.00500	mg/kg	0.0333	ND	50.0	31-137	28.7	30
Anthracene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	25.3	30
Benzo (a) anthracene	0.0145	0.00500	"	0.0333	ND	43.6	30-120	17.4	30
Benzo (a) pyrene	0.0238	0.00500	"	0.0333	ND	71.3	30-120	3.07	30
Benzo (b) fluoranthene	0.0204	0.00500	"	0.0333	ND	61.2	30-120	13.1	30
Benzo (k) fluoranthene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	18.1	30
Chrysene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	8.93	30
Dibenz (a,h) anthracene	0.0234	0.00500	"	0.0333	ND	70.1	30-120	13.1	30
Fluoranthene	0.0218	0.00500	"	0.0333	ND	65.5	30-120	19.1	30
Fluorene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	29.3	30
Indeno (1,2,3-cd) pyrene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	12.9	30
Pyrene	0.0258	0.00500	"	0.0333	ND	77.5	35-142	9.43	30
1-Methylnaphthalene	0.0189	0.00500	"	0.0333	ND	56.6	15-130	13.6	50
2-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	45.8	15-130	32.5	50
Surrogate: 2-Methylnaphthalene-d10	0.0197		"	0.0333		59.2	40-150		
Surrogate: Fluoranthene-d10	0.0174		"	0.0333		52.2	40-150		

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGJ0916 - EPA 5030 Soil MS

Blank (BGJ0916-BLK1)

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

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0271		"	0.0333		81.2	40-150			
Surrogate: Fluoranthene-d10	0.0346		"	0.0333		104	40-150			

LCS (BGJ0916-BS1)

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

Acenaphthene	0.0319	0.00500	mg/kg	0.0333		95.6	31-137			
Anthracene	0.0321	0.00500	"	0.0333		96.4	30-120			
Benzo (a) anthracene	0.0240	0.00500	"	0.0333		72.0	30-120			
Benzo (a) pyrene	0.0286	0.00500	"	0.0333		85.7	30-120			
Benzo (b) fluoranthene	0.0287	0.00500	"	0.0333		86.1	30-120			
Benzo (k) fluoranthene	0.0375	0.00500	"	0.0333		112	30-120			
Chrysene	0.0312	0.00500	"	0.0333		93.6	30-120			
Dibenz (a,h) anthracene	0.0279	0.00500	"	0.0333		83.7	30-120			
Fluoranthene	0.0359	0.00500	"	0.0333		108	30-120			
Fluorene	0.0364	0.00500	"	0.0333		109	30-120			
Indeno (1,2,3-cd) pyrene	0.0278	0.00500	"	0.0333		83.4	30-120			
Pyrene	0.0368	0.00500	"	0.0333		110	35-142			
1-Methylnaphthalene	0.0303	0.00500	"	0.0333		90.9	35-142			
2-Methylnaphthalene	0.0305	0.00500	"	0.0333		91.4	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0316		"	0.0333		94.7	40-150			
Surrogate: Fluoranthene-d10	0.0377		"	0.0333		113	40-150			

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Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BGJ0916 - EPA 5030 Soil MS

Matrix Spike (BGJ0916-MS1)

Source: 2310140-03

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

Acenaphthene	0.0178	0.00500	mg/kg	0.0333	ND	53.3	31-137				
Anthracene	0.0183	0.00500	"	0.0333	ND	54.9	30-120				
Benzo (a) anthracene	0.0115	0.00500	"	0.0333	ND	34.4	30-120				
Benzo (a) pyrene	0.0138	0.00500	"	0.0333	ND	41.4	30-120				
Benzo (b) fluoranthene	0.0162	0.00500	"	0.0333	ND	48.5	30-120				
Benzo (k) fluoranthene	0.0204	0.00500	"	0.0333	ND	61.3	30-120				
Chrysene	0.0189	0.00500	"	0.0333	ND	56.8	30-120				
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333	ND	46.0	30-120				
Fluoranthene	0.0208	0.00500	"	0.0333	ND	62.3	30-120				
Fluorene	0.0210	0.00500	"	0.0333	ND	63.0	30-120				
Indeno (1,2,3-cd) pyrene	0.0145	0.00500	"	0.0333	ND	43.4	30-120				
Pyrene	0.0213	0.00500	"	0.0333	ND	63.8	35-142				
1-Methylnaphthalene	0.0194	0.00500	"	0.0333	ND	58.2	15-130				
2-Methylnaphthalene	0.0175	0.00500	"	0.0333	ND	52.4	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0215		"	0.0333		64.6	40-150				
Surrogate: Fluoranthene-d10	0.0211		"	0.0333		63.4	40-150				

Matrix Spike Dup (BGJ0916-MSD1)

Source: 2310140-03

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

Acenaphthene	0.0163	0.00500	mg/kg	0.0333	ND	49.0	31-137	8.23	30		
Anthracene	0.0169	0.00500	"	0.0333	ND	50.6	30-120	8.24	30		
Benzo (a) anthracene	0.0117	0.00500	"	0.0333	ND	35.0	30-120	1.74	30		
Benzo (a) pyrene	0.0142	0.00500	"	0.0333	ND	42.5	30-120	2.58	30		
Benzo (b) fluoranthene	0.0145	0.00500	"	0.0333	ND	43.6	30-120	10.7	30		
Benzo (k) fluoranthene	0.0188	0.00500	"	0.0333	ND	56.3	30-120	8.51	30		
Chrysene	0.0169	0.00500	"	0.0333	ND	50.8	30-120	11.1	30		
Dibenz (a,h) anthracene	0.0137	0.00500	"	0.0333	ND	41.2	30-120	11.1	30		
Fluoranthene	0.0191	0.00500	"	0.0333	ND	57.3	30-120	8.37	30		
Fluorene	0.0193	0.00500	"	0.0333	ND	58.0	30-120	8.28	30		
Indeno (1,2,3-cd) pyrene	0.0128	0.00500	"	0.0333	ND	38.4	30-120	12.3	30		
Pyrene	0.0201	0.00500	"	0.0333	ND	60.2	35-142	5.79	30		
1-Methylnaphthalene	0.0187	0.00500	"	0.0333	ND	56.1	15-130	3.62	50		
2-Methylnaphthalene	0.0155	0.00500	"	0.0333	ND	46.4	15-130	12.1	50		
Surrogate: 2-Methylnaphthalene-d10	0.0196		"	0.0333		58.7	40-150				
Surrogate: Fluoranthene-d10	0.0194		"	0.0333		58.1	40-150				

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

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

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

Batch BGJ0503 - EPA 3050B

Blank (BGJ0503-BLK1)

Prepared & Analyzed: 10/12/23

Boron ND 2.00 mg/L

LCS (BGJ0503-BS1)

Prepared & Analyzed: 10/12/23

Boron 4.62 2.00 mg/L 5.00 92.4 80-120

Duplicate (BGJ0503-DUP1)

Source: 2310074-02RE1

Prepared & Analyzed: 10/12/23

Boron 2.32 2.00 mg/L 2.30 0.861 20

Matrix Spike (BGJ0503-MS1)

Source: 2310074-02RE1

Prepared & Analyzed: 10/12/23

Boron 7.12 2.00 mg/L 5.00 2.30 96.4 75-125

Matrix Spike Dup (BGJ0503-MSD1)

Source: 2310074-02RE1

Prepared & Analyzed: 10/12/23

Boron 6.85 2.00 mg/L 5.00 2.30 91.1 75-125 3.78 25

Batch BGJ1237 - EPA 3050B

Blank (BGJ1237-BLK1)

Prepared: 10/31/23 Analyzed: 11/03/23

Boron ND 2.00 mg/L

LCS (BGJ1237-BS1)

Prepared: 10/31/23 Analyzed: 11/03/23

Boron 4.51 2.00 mg/L 5.00 90.3 80-120

Duplicate (BGJ1237-DUP1)

Source: 2310140-03

Prepared: 10/31/23 Analyzed: 11/03/23

Boron 0.237 2.00 mg/L 0.257 8.39 20

Matrix Spike (BGJ1237-MS1)

Source: 2310140-03

Prepared: 10/31/23 Analyzed: 11/03/23

Boron 4.40 2.00 mg/L 5.00 0.257 82.9 75-125

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Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

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

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

Batch BGJ1237 - EPA 3050B

Matrix Spike Dup (BGJ1237-MSD1)			Source: 2310140-03			Prepared: 10/31/23 Analyzed: 11/03/23				
Boron	4.71	2.00	mg/L	5.00	0.257	89.0	75-125	6.61	25	

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Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGJ0473 - EPA 3050B

Blank (BGJ0473-BLK1)

Prepared: 10/11/23 Analyzed: 10/13/23

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

LCS (BGJ0473-BS1)

Prepared: 10/11/23 Analyzed: 10/13/23

Arsenic	40.8	0.200	mg/kg wet	40.0	102	80-120
Barium	42.4	0.400	"	40.0	106	80-120
Cadmium	2.28	0.200	"	2.00	114	80-120
Copper	43.6	0.400	"	40.0	109	80-120
Lead	22.1	0.200	"	20.0	110	80-120
Nickel	44.6	0.400	"	40.0	112	80-120
Silver	1.68	0.0200	"	2.00	84.0	80-120
Zinc	43.8	0.400	"	40.0	110	80-120
Selenium	4.59	0.260	"	4.00	115	80-120

Duplicate (BGJ0473-DUP1)

Source: 2310118-01

Prepared: 10/11/23 Analyzed: 10/13/23

Arsenic	0.477	0.200	mg/kg dry	0.509	6.38	20
Barium	69.7	0.400	"	62.3	11.2	20
Cadmium	0.177	0.200	"	0.145	20.1	20
Copper	9.93	0.400	"	8.72	13.0	20
Lead	3.79	0.200	"	3.48	8.45	20
Nickel	1.16	0.400	"	1.08	6.98	20
Silver	0.0104	0.0200	"	0.0112	8.00	20
Zinc	51.4	0.400	"	44.0	15.6	20
Selenium	0.454	0.260	"	0.427	6.27	20

QR-01

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGJ0473 - EPA 3050B

Matrix Spike (BGJ0473-MS1)		Source: 2310118-01			Prepared: 10/11/23 Analyzed: 10/13/23						
Arsenic	27.0	0.200	mg/kg dry	43.1	0.509	61.5	75-125				QM-07
Barium	108	0.400	"	43.1	62.3	105	75-125				
Cadmium	2.54	0.200	"	2.16	0.145	111	75-125				
Copper	33.3	0.400	"	43.1	8.72	56.9	75-125				QM-07
Lead	25.8	0.200	"	21.6	3.48	103	75-125				
Nickel	25.7	0.400	"	43.1	1.08	57.1	75-125				QM-07
Silver	1.73	0.0200	"	2.16	0.0112	79.8	75-125				
Zinc	71.2	0.400	"	43.1	44.0	63.1	75-125				QM-07
Selenium	7.45	0.260	"	4.31	0.427	163	75-125				QM-07

Matrix Spike Dup (BGJ0473-MSD1)		Source: 2310118-01			Prepared: 10/11/23 Analyzed: 10/13/23						
Arsenic	28.1	0.200	mg/kg dry	43.1	0.509	64.0	75-125	3.97	25		QM-07
Barium	109	0.400	"	43.1	62.3	107	75-125	0.905	25		
Cadmium	2.60	0.200	"	2.16	0.145	114	75-125	2.58	25		
Copper	34.5	0.400	"	43.1	8.72	59.7	75-125	3.58	25		QM-07
Lead	25.9	0.200	"	21.6	3.48	104	75-125	0.362	25		
Nickel	26.7	0.400	"	43.1	1.08	59.3	75-125	3.65	25		QM-07
Silver	1.72	0.0200	"	2.16	0.0112	79.4	75-125	0.499	25		
Zinc	73.7	0.400	"	43.1	44.0	68.8	75-125	3.38	25		QM-07
Selenium	7.44	0.260	"	4.31	0.427	162	75-125	0.145	25		QM-07

Batch BGJ1173 - EPA 3050B

Blank (BGJ1173-BLK1)		Prepared: 10/30/23 Analyzed: 10/31/23									
Arsenic	ND	0.200	mg/kg wet								
Barium	ND	0.400	"								
Cadmium	ND	0.200	"								
Copper	ND	0.400	"								
Lead	ND	0.200	"								
Nickel	ND	0.400	"								
Silver	ND	0.0200	"								
Zinc	ND	0.400	"								
Selenium	ND	0.260	"								

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGJ1173 - EPA 3050B

LCS (BGJ1173-BS1)

Prepared: 10/30/23 Analyzed: 10/31/23

Arsenic	33.8	0.200	mg/kg wet	40.0		84.6	80-120			
Barium	35.6	0.400	"	40.0		89.1	80-120			
Cadmium	1.75	0.200	"	2.00		87.5	80-120			
Copper	35.9	0.400	"	40.0		89.7	80-120			
Lead	17.4	0.200	"	20.0		87.2	80-120			
Nickel	35.9	0.400	"	40.0		89.8	80-120			
Silver	1.74	0.0200	"	2.00		87.2	80-120			
Zinc	35.4	0.400	"	40.0		88.5	80-120			
Selenium	3.89	0.260	"	4.00		97.3	80-120			

Duplicate (BGJ1173-DUP1)

Source: 2310112-01

Prepared: 10/30/23 Analyzed: 10/31/23

Arsenic	5.06	0.200	mg/kg dry		5.02		0.686	20		
Barium	321	0.400	"		154		70.5	20		QR-04
Cadmium	0.232	0.200	"		0.233		0.610	20		
Copper	7.44	0.400	"		6.50		13.5	20		
Lead	19.7	0.200	"		11.8		50.6	20		QR-04
Nickel	8.37	0.400	"		7.74		7.89	20		
Silver	0.0516	0.0200	"		0.0426		19.1	20		
Zinc	30.6	0.400	"		25.7		17.1	20		
Selenium	0.214	0.260	"		0.203		5.45	20		

Matrix Spike (BGJ1173-MS1)

Source: 2310112-01

Prepared: 10/30/23 Analyzed: 10/31/23

Arsenic	42.5	0.200	mg/kg dry	47.3	5.02	79.2	75-125			
Barium	272	0.400	"	47.3	154	250	75-125			QM-07
Cadmium	2.59	0.200	"	2.37	0.233	99.6	75-125			
Copper	32.4	0.400	"	47.3	6.50	54.8	75-125			QM-07
Lead	38.7	0.200	"	23.7	11.8	114	75-125			
Nickel	32.9	0.400	"	47.3	7.74	53.1	75-125			QM-07
Silver	2.02	0.0200	"	2.37	0.0426	83.7	75-125			
Zinc	58.8	0.400	"	47.3	25.7	69.9	75-125			QM-07
Selenium	3.40	0.260	"	4.73	0.203	67.4	75-125			QM-07

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Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGJ1173 - EPA 3050B

Matrix Spike Dup (BGJ1173-MSD1)

Source: 2310112-01

Prepared: 10/30/23 Analyzed: 10/31/23

Arsenic	41.6	0.200	mg/kg dry	47.3	5.02	77.4	75-125	2.02	25	
Barium	272	0.400	"	47.3	154	250	75-125	0.0976	25	QM-07
Cadmium	2.58	0.200	"	2.37	0.233	99.3	75-125	0.201	25	
Copper	32.5	0.400	"	47.3	6.50	55.0	75-125	0.386	25	QM-07
Lead	38.8	0.200	"	23.7	11.8	114	75-125	0.169	25	
Nickel	33.0	0.400	"	47.3	7.74	53.3	75-125	0.279	25	QM-07
Silver	2.01	0.0200	"	2.37	0.0426	83.2	75-125	0.657	25	
Zinc	58.9	0.400	"	47.3	25.7	70.0	75-125	0.0853	25	QM-07
Selenium	3.49	0.260	"	4.73	0.203	69.5	75-125	2.78	25	QM-07

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Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGJ0470 - 3060A Mod

Blank (BGJ0470-BLK1)

Prepared: 10/11/23 Analyzed: 10/12/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGJ0470-BS1)

Prepared: 10/11/23 Analyzed: 10/12/23

Chromium, Hexavalent 24.4 0.30 mg/kg wet 25.0 97.6 80-120

Duplicate (BGJ0470-DUP1)

Source: 2310131-01

Prepared: 10/11/23 Analyzed: 10/12/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGJ0470-MS1)

Source: 2310131-01

Prepared: 10/11/23 Analyzed: 10/12/23

Chromium, Hexavalent 24.8 0.30 mg/kg dry 26.9 ND 92.4 75-125

Matrix Spike Dup (BGJ0470-MSD1)

Source: 2310131-01

Prepared: 10/11/23 Analyzed: 10/12/23

Chromium, Hexavalent 25.0 0.30 mg/kg dry 26.9 ND 92.8 75-125 0.432 20

Batch BGJ1089 - 3060A Mod

Blank (BGJ1089-BLK1)

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGJ1089-BS1)

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent 26.6 0.30 mg/kg wet 25.0 107 80-120

Duplicate (BGJ1089-DUP1)

Source: 2310112-01

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGJ1089-MS1)

Source: 2310112-01

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent 26.3 0.30 mg/kg dry 29.6 ND 89.0 75-125

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Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGJ1089 - 3060A Mod

Matrix Spike Dup (BGJ1089-MSD1)

Source: 2310112-01

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent	26.3	0.30	mg/kg dry	29.6	ND	88.8	75-125	0.225	20
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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

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

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

Batch BGJ0574 - General Preparation

Blank (BGJ0574-BLK1)

Prepared: 10/13/23 Analyzed: 10/17/23

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

LCS (BGJ0574-BS1)

Prepared: 10/13/23 Analyzed: 10/17/23

Calcium	6.29	0.0500	mg/L wet	5.00	126	70-130
Magnesium	5.69	0.0500	"	5.00	114	70-130
Sodium	5.66	0.0500	"	5.00	113	70-130

Batch BGJ1086 - General Preparation

Blank (BGJ1086-BLK1)

Prepared: 10/26/23 Analyzed: 10/31/23

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

LCS (BGJ1086-BS1)

Prepared: 10/26/23 Analyzed: 10/31/23

Calcium	5.71	0.0500	mg/L wet	5.00	114	70-130
Magnesium	5.50	0.0500	"	5.00	110	70-130
Sodium	5.50	0.0500	"	5.00	110	70-130

Summit Scientific

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Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN

Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

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

Summit Scientific

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

Batch BGJ0549 - General Preparation

Duplicate (BGJ0549-DUP1)

Source: 2309486-01

Prepared & Analyzed: 10/13/23

% Solids	84.7	%		84.6		0.136	20
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Batch BGJ1242 - General Preparation

Duplicate (BGJ1242-DUP1)

Source: 2310140-03

Prepared & Analyzed: 10/31/23

% Solids	79.3	%		78.4		1.14	20
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Summit Scientific

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Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

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

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

Batch BGJ0593 - General Preparation

Blank (BGJ0593-BLK1)

Prepared: 10/16/23 Analyzed: 10/17/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGJ0593-BS1)

Prepared: 10/16/23 Analyzed: 10/17/23

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

Duplicate (BGJ0593-DUP1)

Source: 2310131-01

Prepared: 10/16/23 Analyzed: 10/17/23

Specific Conductance (EC) 1.50 0.0100 mmhos/cm 1.54 2.70 20

Batch BGJ1105 - General Preparation

Blank (BGJ1105-BLK1)

Prepared: 10/27/23 Analyzed: 10/30/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGJ1105-BS1)

Prepared: 10/27/23 Analyzed: 10/30/23

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 100 95-105

Duplicate (BGJ1105-DUP1)

Source: 2310140-03

Prepared: 10/27/23 Analyzed: 10/30/23

Specific Conductance (EC) 0.161 0.0100 mmhos/cm 0.161 0.00 20

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

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

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

Batch BGJ0592 - General Preparation

LCS (BGJ0592-BS1)				Prepared: 10/16/23 Analyzed: 10/17/23						
pH	9.12		pH Units	9.18		99.3	95-105			
Duplicate (BGJ0592-DUP1)				Source: 2309486-01 Prepared: 10/16/23 Analyzed: 10/17/23						
pH	8.20		pH Units		8.20			0.00	20	

Batch BGJ0911 - General Preparation

LCS (BGJ0911-BS1)				Prepared & Analyzed: 10/23/23						
pH	9.04		pH Units	9.18		98.5	95-105			
Duplicate (BGJ0911-DUP1)				Source: 2309140-01 Prepared & Analyzed: 10/23/23						
pH	8.63		pH Units		8.62			0.116	20	

Batch BGJ1103 - General Preparation

LCS (BGJ1103-BS1)				Prepared: 10/27/23 Analyzed: 10/30/23						
pH	9.05		pH Units	9.18		98.6	95-105			
Duplicate (BGJ1103-DUP1)				Source: 2310140-04 Prepared: 10/27/23 Analyzed: 10/30/23						
pH	8.51		pH Units		8.51			0.00	20	

Batch BGK0227 - General Preparation

LCS (BGK0227-BS1)				Prepared & Analyzed: 11/07/23						
pH	9.14		pH Units	9.18		99.6	95-105			

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

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

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

Batch BGK0227 - General Preparation

Duplicate (BGK0227-DUP1)

Source: 2310140-07RE1

Prepared & Analyzed: 11/07/23

pH	8.10	pH Units	8.06	0.495	20
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Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
11/08/23 14:57

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
I-04	Sample was analyzed out of recommended holding time per clients request.
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