

**SECOND QUARTER 2024**  
**SITE MONITORING DATA**  
**MATSUSHIMA-PM K 2-1 FACILITY**  
**ECMC SPILL TRACKING #327037**  
**ECMC REMEDIATION #29940**

Prepared for:



2115 117th Avenue  
Greeley, CO 80631

Prepared by:



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

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**NOBLE ENERGY, INC. - MATSUSHIMA-PM K 2-1**



Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.) <sup>(1)</sup>	Depth to LNAPL (ft.) <sup>(1)</sup>	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	12/21/23	4666.56	13.16	6.23	ND	ND	4660.59
BH01	03/06/24	4666.56	13.25	6.69	ND	ND	4660.13
BH01	06/03/24	4666.56	13.20	3.61	ND	ND	4663.21
BH02	12/21/23	4667.03	13.38	6.70	ND	ND	4660.55
BH02	03/06/24	4667.03	13.31	7.14	ND	ND	4660.11
BH02	06/03/24	4667.03	13.56	4.07	ND	ND	4663.18
BH03	12/21/23	4666.71	13.35	6.40	ND	ND	4660.55
BH03	03/06/24	4666.71	13.37	6.86	ND	ND	4660.09
BH03	06/03/24	4666.71	13.35	3.79	ND	ND	4663.16
BH04	12/21/23	4666.20	13.36	5.79	ND	ND	4660.63
BH04	03/06/24	4666.20	13.39	6.27	ND	ND	4660.15
BH04	06/03/24	4666.20	13.32	3.19	ND	ND	4663.23
BH05	12/21/23	4667.24	13.66	4.89	ND	ND	4661.61
BH05	03/06/24	4667.24	13.59	5.30	ND	ND	4661.20
BH05	06/03/24	4667.24	13.65	2.26	ND	ND	4664.24

**Notes:**

\* Groundwater elevation was corrected for product thickness (when present) using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water)+(LNAPL Thickness in Well x LNAPL Relative Density)

LNAPL relative density was estimated to be approximately 0.75

1. Depth to water measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

**Definitions:**

ft. = Feet

BTOC = Below top of casing

ND = No LNAPL detected

AMSL = Above mean sea level

LNAPL = Light non-aqueous phase liquid

TABLE 2  
GROUNDWATER ANALYTICAL DATA  
NOBLE ENERGY, INC. - MATSUSHIMA-PM K 2-1



Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4 - TMB (µg/L)	1,3,5 - TMB (µg/L)	1-M (µg/L)	2-M (µg/L)	Total Dissolved Solids (mg/L)	Chlorides (mg/L)	Sulfates (mg/L)
ECMC Standard <sup>(1)</sup>		5	560	700	1,400	140	67	67	1.1 <sup>(2)</sup>	3.6 <sup>(2)</sup>	1.25 X Background	250	250
BH01	12/21/23	3.3	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	758	125	274
BH01	03/06/24	2.7	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	823	116	320
BH01	06/03/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	816	141	277
BH02	12/21/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	797	127	265
BH02	03/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	834	118	261
BH02	06/03/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	808	148	307
BH03	12/21/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	779	122	265
BH03	03/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	859	120	258
BH03	06/03/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	802	138	303
BH04 <sup>(3)</sup>	12/21/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	809	118	252
BH04 <sup>(3)</sup>	03/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	820	116	252
BH04 <sup>(3)</sup>	06/03/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	793	137	278
BH05 <sup>(3)</sup>	12/21/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	824	130	274
BH05 <sup>(3)</sup>	03/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	815	117	270
BH05 <sup>(3)</sup>	06/03/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	801	135	280

Notes:

- <sup>(1)</sup> Groundwater standards referenced from 2 CCR 404-1, Table 915-1 (January 15, 2021).
- <sup>(2)</sup> Groundwater standards reference from USEPA Regional Screening Level (RSL) Resident Tapwater Table (TR=1E-06, HQ=0.1) November 2022
- <sup>(3)</sup> Monitoring well used for background inorganic concentrations

Definitions:

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

ECMC = Colorado Energy and Carbon Management Commission

USEPA = United States Environmental Protection Agency

µg/L = Micrograms per liter

mg/L = Milligrams per liter

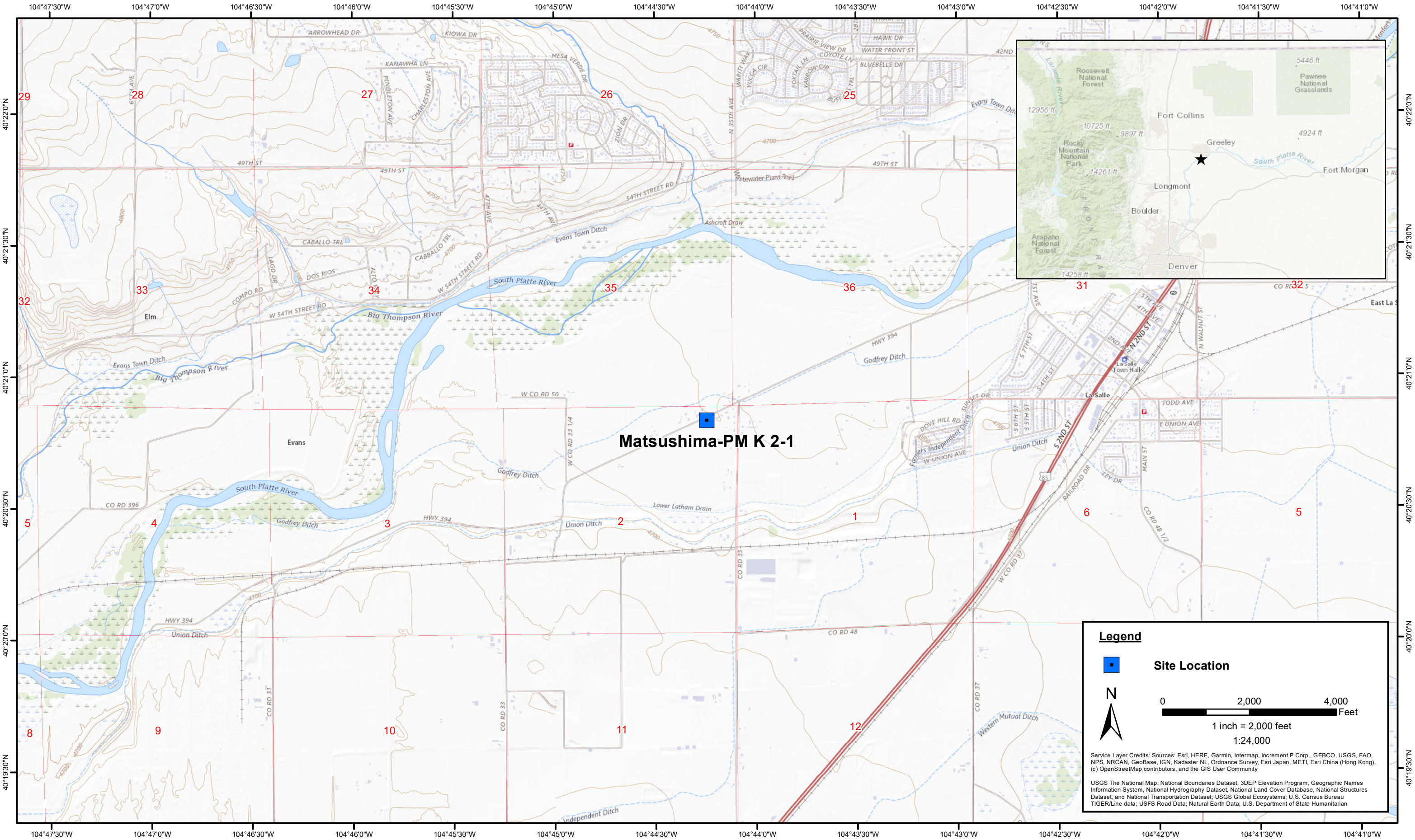
1,2,4 - TMB = 1,2,4 - trimethylbenzene

1,3,5 - TMB = 1,3,5 - trimethylbenzene

M = Methylnaphthalene

TDS = Total Dissolved Solids





DATE:  
October 2023

DESIGNED BY:  
J. Whritenour

DRAWN BY:  
L. Reed

 **TASMAN** 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





DATE:	January 2024
DESIGNED BY:	JW
DRAWN BY:	MR

**TASMAN**

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

**Noble Energy, Inc. – DJ Basin**  
**Matsushima-PMK 2-1**  
NENE, Section 2, Township 4 North, Range 66 West  
Weld County, Colorado

Site Overview Map

**FIGURE**  
**2**





DATE:	June 2024
DESIGNED BY:	JW
DRAWN BY:	J. Woffinden



**TASMAN**

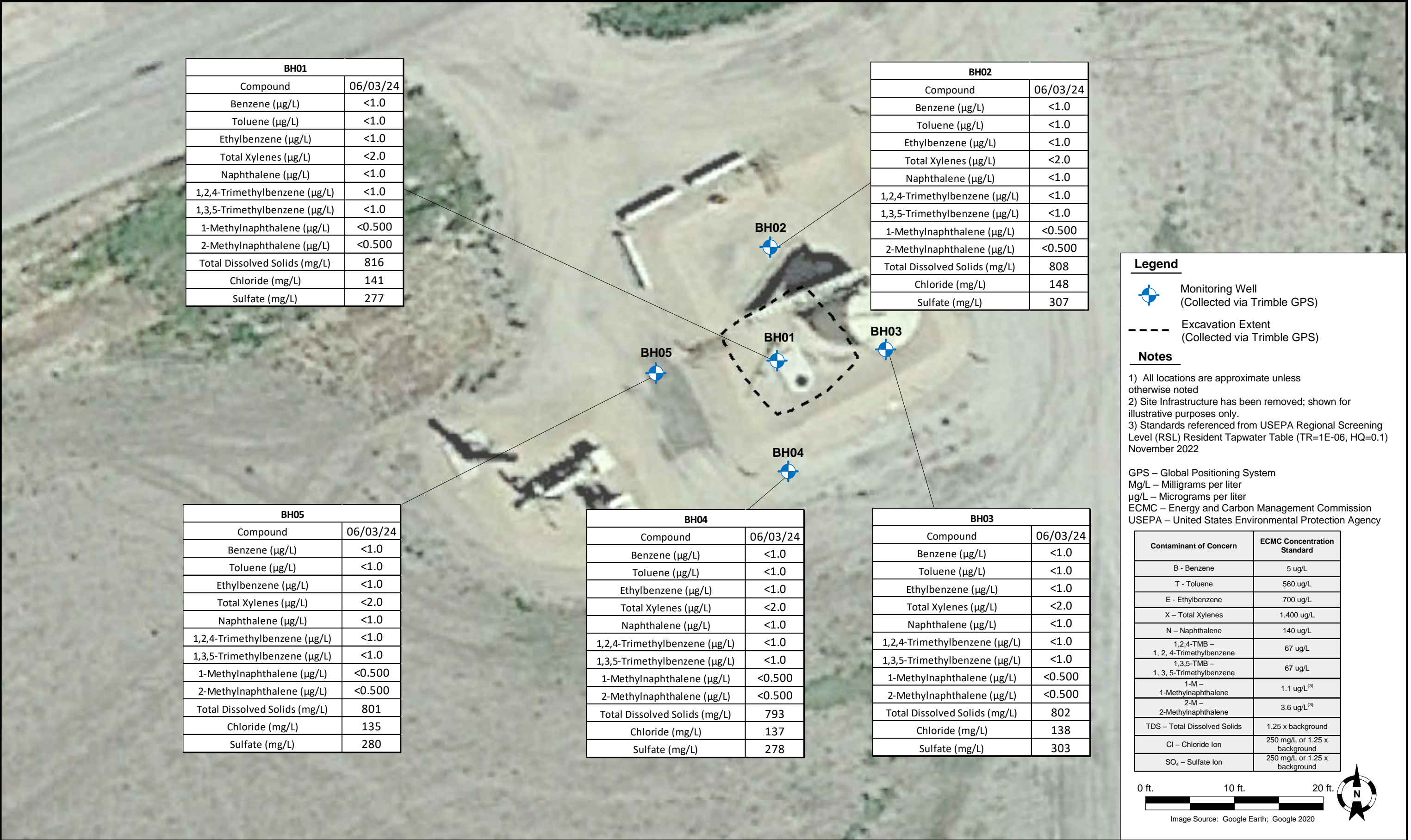
Tasman, Inc.  
6855 W 119<sup>th</sup> Ave.  
Broomfield, CO 80020

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

Groundwater Potentiometric  
Surface Contour Map  
(06/03/2024)

**FIGURE**  
**3**









DATE:	June 7, 2024
DESIGNED BY:	JW
DRAWN BY:	JM



**Tasman, Inc.**  
6855 W 119<sup>th</sup> Avenue  
Broomfield, CO 80020

**Noble Energy, Inc. – DJ Basin**  
**Matsushima-PMK 2-1**  
NENE, Section 2, Township 4 North, Range 66 West  
Weld County, Colorado

Proposed Site  
Assessment Map

Figure  
5



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 02, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Matsushima-PM K 2-1

Work Order #2406012

Enclosed are the results of analyses for samples received by Summit Scientific on 06/03/24 17:47. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Natalie Tessier". The signature is fluid and cursive, with the first name being more prominent.

Natalie Tessier 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:**  
07/02/24 08:17

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2406012-01	Water	06/03/24 11:45	06/03/24 17:47
BH02	2406012-02	Water	06/03/24 11:30	06/03/24 17:47
BH03	2406012-03	Water	06/03/24 11:31	06/03/24 17:47
BH04	2406012-04	Water	06/03/24 11:43	06/03/24 17:47
BH05	2406012-05	Water	06/03/24 11:27	06/03/24 17:47





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

Lab ID	Page 1 of 1
2406012	

Client: Noble Noble / Tasman		Send Data To: Project Manager: Jake Whritenour		Send Invoice To: Company:	
Address: 6855 W 119th Ave		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone:		Project Name: Matsushima PMK 2-1		PO/Billing Codes:	
Sampler Name: Jordan Hestmark		Project Number:		Contact: Dan Peterson	

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5 - TMB	Boron - HWS	pH, EC, SAR	PAHs - 915	Metals - 915	TDS, SO4, Cl		
1	BH01	6/3/24	1145	6	3				X				X		X						X	X
2	BH02		1130																			
3	BH03		1131																			
4	BH04		1143																			
5	BH05		1127																			
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by: Jordan Hestmark	Date/Time: 6/3/24 1616	Received by: Tasman Lockbox	Date/Time: 6/3/24 1616	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lockbox	Date/Time: 6/3/24 1747	Received by: [Signature]	Date/Time: 6/3/24 1747	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 10.8	Corrected Temperature: 9	IR gun #: 1	HNO3 lot #:	Standard	X Field Turb.	



S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2406012Client: Nobu Tanaka Client Project ID: Matsushima Pmk 2-1Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

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

Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☒ Other ☐Temp (°C) 6.8 Thermometer # 1

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

Additional Comments (if any):

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.AS  
Custodian Printed Name6/3/24  
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:**  
07/02/24 08:17

**BH01**  
**2406012-01 (Water)**

**Summit Scientific**

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

Date Sampled: **06/03/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BHF0082	06/04/24	06/05/24	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **06/03/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	13.9	104 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.3	99.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.0	97.6 %		21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/03/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
1-Methylnaphthalene	ND	0.500		ug/l	1	BHF0057	06/04/24	06/05/24	EPA 8270D SIM	
2-Methylnaphthalene	ND	0.500		"	"	"	"	"	"	

Date Sampled: **06/03/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 2-Methylnaphthalene-d10	2.23	111 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.47	123 %		40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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:**  
07/02/24 08:17

**BH01**  
**2406012-01 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/03/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>141</b>	12.0		mg/L	200	BHF0754	06/24/24	06/26/24	EPA 300.0	
<b>Sulfate</b>	<b>277</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/03/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>816</b>	10.0		mg/L	1	BHF0055	06/04/24	06/04/24	SM2540C	

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:**  
07/02/24 08:17

**BH02**  
**2406012-02 (Water)**

**Summit Scientific**

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

Date Sampled: **06/03/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0082	06/04/24	06/05/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/03/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.4	108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.2	99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.0	97.9 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/03/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
1-Methylnaphthalene	ND	0.500	ug/l	1	BHF0057	06/04/24	06/05/24	EPA 8270D SIM	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **06/03/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	2.20	110 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.19	110 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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:**  
07/02/24 08:17

**BH02**  
**2406012-02 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/03/24 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>148</b>	12.0		mg/L	200	BHF0754	06/24/24	06/26/24	EPA 300.0	
<b>Sulfate</b>	<b>307</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/03/24 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>808</b>	10.0		mg/L	1	BHF0055	06/04/24	06/04/24	SM2540C	

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:**  
07/02/24 08:17

**BH03**  
**2406012-03 (Water)**

**Summit Scientific**

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

Date Sampled: **06/03/24 11:31**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0082	06/04/24	06/05/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/03/24 11:31**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.9	104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.9	96.5 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/03/24 11:31**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
1-Methylnaphthalene	ND	0.500	ug/l	1	BHF0057	06/04/24	06/05/24	EPA 8270D SIM	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **06/03/24 11:31**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	2.07	103 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.42	121 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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:**  
07/02/24 08:17

**BH03**  
**2406012-03 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/03/24 11:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>138</b>	12.0		mg/L	200	BHF0754	06/24/24	06/26/24	EPA 300.0	
Sulfate	<b>303</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/03/24 11:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>802</b>	10.0		mg/L	1	BHF0055	06/04/24	06/04/24	SM2540C	

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:**  
07/02/24 08:17

**BH04**  
**2406012-04 (Water)**

**Summit Scientific**

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

Date Sampled: **06/03/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0082	06/04/24	06/05/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/03/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.2	107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.4	100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.0	97.2 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/03/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
1-Methylnaphthalene	ND	0.500	ug/l	1	BHF0057	06/04/24	06/05/24	EPA 8270D SIM	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **06/03/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	2.03	102 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.28	114 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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:**  
07/02/24 08:17

**BH04**  
**2406012-04 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/03/24 11:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	137	12.0		mg/L	200	BHF0754	06/24/24	06/26/24	EPA 300.0	
Sulfate	278	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/03/24 11:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	793	10.0		mg/L	1	BHF0055	06/04/24	06/04/24	SM2540C	

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:**  
07/02/24 08:17

**BH05**  
**2406012-05 (Water)**

**Summit Scientific**

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

Date Sampled: **06/03/24 11:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0082	06/04/24	06/05/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/03/24 11:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.0	105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.9	97.0 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/03/24 11:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
1-Methylnaphthalene	ND	0.500	ug/l	1	BHF0057	06/04/24	06/05/24	EPA 8270D SIM	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **06/03/24 11:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.97	98.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.24	112 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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:**  
07/02/24 08:17

**BH05**  
**2406012-05 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/03/24 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>135</b>	12.0		mg/L	200	BHF0754	06/24/24	06/26/24	EPA 300.0	
<b>Sulfate</b>	<b>280</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/03/24 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>801</b>	10.0		mg/L	1	BHF0055	06/04/24	06/04/24	SM2540C	

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:**  
07/02/24 08:17

## 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 BHF0082 - EPA 5030 Water MS

##### Blank (BHF0082-BLK1)

Prepared & Analyzed: 06/04/24

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.3		104	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.4	21-167			

##### LCS (BHF0082-BS1)

Prepared: 06/04/24 Analyzed: 06/05/24

Benzene	36.0	1.0	ug/l	33.3		108	51-132			
Toluene	35.9	1.0	"	33.3		108	51-138			
Ethylbenzene	36.9	1.0	"	33.3		111	58-146			
m,p-Xylene	68.8	2.0	"	66.7		103	57-144			
o-Xylene	33.6	1.0	"	33.3		101	53-146			
Naphthalene	36.1	1.0	"	33.3		108	70-130			
1,2,4-Trimethylbenzene	35.1	1.0	"	33.3		105	70-130			
1,3,5-Trimethylbenzene	35.4	1.0	"	33.3		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		109	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	21-167			

##### LCS Dup (BHF0082-BSD1)

Prepared & Analyzed: 06/04/24

Benzene	39.1	1.0	ug/l	33.3		117	51-132	8.31	20	
Toluene	38.4	1.0	"	33.3		115	51-138	6.76	20	
Ethylbenzene	38.6	1.0	"	33.3		116	58-146	4.43	20	
m,p-Xylene	71.5	2.0	"	66.7		107	57-144	3.94	20	
o-Xylene	35.0	1.0	"	33.3		105	53-146	3.99	20	
Naphthalene	34.9	1.0	"	33.3		105	70-130	3.33	20	
1,2,4-Trimethylbenzene	36.2	1.0	"	33.3		109	70-130	3.17	20	
1,3,5-Trimethylbenzene	36.7	1.0	"	33.3		110	70-130	3.66	20	
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	21-167			

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:**  
07/02/24 08:17

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

**Summit Scientific**

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

**Batch BHF0057 - EPA 5030 Water MS**

**Blank (BHF0057-BLK1)**

Prepared & Analyzed: 06/04/24

1-Methylnaphthalene	ND	0.500	ug/l							
2-Methylnaphthalene	ND	0.500	"							
Surrogate: 2-Methylnaphthalene-d10	2.19		"	2.00		110	40-150			
Surrogate: Fluoranthene-d10	2.48		"	2.00		124	40-150			

**LCS (BHF0057-BS1)**

Prepared & Analyzed: 06/04/24

1-Methylnaphthalene	2.28	0.500	ug/l	2.00		114	30-120			
2-Methylnaphthalene	1.41	0.500	"	2.00		70.7	0-200			
Surrogate: 2-Methylnaphthalene-d10	1.89		"	2.00		94.4	40-150			
Surrogate: Fluoranthene-d10	1.95		"	2.00		97.6	40-150			

**LCS Dup (BHF0057-BSD1)**

Prepared & Analyzed: 06/04/24

1-Methylnaphthalene	2.27	0.500	ug/l	2.00		113	30-120	0.621	30	
2-Methylnaphthalene	1.17	0.500	"	2.00		58.4	0-200	19.1	200	
Surrogate: 2-Methylnaphthalene-d10	1.94		"	2.00		97.2	40-150			
Surrogate: Fluoranthene-d10	2.15		"	2.00		107	40-150			

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:**  
07/02/24 08:17

**Anions by EPA Method 300.0 - Quality Control**  
**Summit Scientific**

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

**Batch BHF0754 - General Preparation**

**Blank (BHF0754-BLK1)**

Prepared: 06/24/24 Analyzed: 06/26/24

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

**LCS (BHF0754-BS1)**

Prepared: 06/24/24 Analyzed: 06/26/24

Chloride	3.15	0.0600	mg/L	3.00	105	90-110
Sulfate	15.2	0.300	"	15.0	102	90-110

**Duplicate (BHF0754-DUP1)**

Source: 2406011-01

Prepared: 06/24/24 Analyzed: 06/26/24

Chloride	119	12.0	mg/L	111	6.83	20
Sulfate	300	60.0	"	280	6.84	20

**Matrix Spike (BHF0754-MS1)**

Source: 2406011-01

Prepared: 06/24/24 Analyzed: 06/26/24

Chloride	611	12.0	mg/L	600	111	83.3	80-120
Sulfate	2680	60.0	"	3000	280	80.0	80-120

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:**  
07/02/24 08:17

### Total Dissolved Solids by SM2540C - Quality Control

#### Summit Scientific

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

#### Batch BHF0055 - General Preparation

##### Blank (BHF0055-BLK1)

Prepared & Analyzed: 06/04/24

Total Dissolved Solids ND 10.0 mg/L

##### Duplicate (BHF0055-DUP1)

Source: 2406011-01

Prepared & Analyzed: 06/04/24

Total Dissolved Solids 742 10.0 mg/L 757 1.95 20

Summit Scientific

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



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

Project: Noble - Matsushima-PM K 2-1

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

**Reported:**  
07/02/24 08:17

### Notes and Definitions

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