

# 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 - Hagemeister USX AA07-05 Tank Battery

Work Order #2406192

Enclosed are the results of analyses for samples received by Summit Scientific on 06/13/24 17:43. 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 written in a cursive, flowing style.

Natalie Tessier For Paul Shrewsbury

President



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

Project: Noble - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN

Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0-6"	2406192-01	Soil	06/13/24 11:25	06/13/24 17:43
AST02@0-6"	2406192-02	Soil	06/13/24 11:27	06/13/24 17:43
SEP01-DL@3'	2406192-03	Soil	06/13/24 12:26	06/13/24 17:43
PWV01-B@4'	2406192-04	Soil	06/13/24 11:45	06/13/24 17:43
PWV01-N@2.5'	2406192-05	Soil	06/13/24 11:47	06/13/24 17:43
BKG01@1'	2406192-09	Soil	06/13/24 12:50	06/13/24 17:43
BKG01@2'	2406192-10	Soil	06/13/24 12:52	06/13/24 17:43
BKG01@3'	2406192-11	Soil	06/13/24 12:54	06/13/24 17:43
BKG01@4'	2406192-12	Soil	06/13/24 12:56	06/13/24 17:43

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 240692 Page 1 of 1

<b>Send Data To:</b>		<b>Send Invoice To:</b>	
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Noble/Chevron	
Address: 6855 W. 119th Avenue	E-Mail: jwhritenour@tasman-geo.com	Project Name/Location: <u>Hagerman USX AA07-05 Tank Battery</u>	
City/State/Zip: Broomfield, CO 80020		AFE#: <u>UWRWE-44065-ABN</u>	
Phone: <u>303-487-1228</u>	Project Name: <u>Hagerman USX AA07-05 Tank Battery</u>	PO/Billing Codes:	
Sampler Name: <u>David Vigil</u>	Project Number:	Contact: <u>Mike Montoya</u>	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	915-VOC	915-PAH	915-TPH	pH, EC, SAR	Boron		915-Metals
1	AST01 @ 0-6"	6/13/24	1125	3			X			X			X	X	X	X	X	X	
2	AST02 @ 0-6"		1127										X	X	X	X	X	X	
3	SEP01-DL @ 3'		1226										X	X	X	X	X	X	
4	PWV01-B @ 4'		1145										X	X	X	X	X	X	
5	PWV01-N @ 2.5'		1147										X	X	X	X	X	X	
6	PWV01-W @ 2.5'		1150																X
7	PWV01-S @ 2.5'		1153																X
8	PWV01-E @ 2.5'		1156	↓															X
9	BK601 @ 1'		1250	2													X	X	
10	BK601 @ 2'		1252														X	X	
11	BK601 @ 3'		1254														X	X	
12	BK601 @ 4'	↓	1256	↓													X	X	
13																			
14																			
15																			

Relinquished by: <u>David Vigil</u>	Date/Time: <u>6/13/24</u> 1630	Received by: <u>Tasman lockbox</u>	Date/Time: <u>6/13/24</u> 1630	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman lockbox</u>	Date/Time: <u>6/13/24</u> 1743	Received by: <u>[Signature]</u>	Date/Time: <u>6/13/24</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: <u>9.5</u>	Corrected Temperature: <u>8</u>	IR gun #:		HNO3 lot #:		

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 24061912

Client: Nare Tasman

Client Project ID: Hogemeister USX AA07-05 Tank Battery

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

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

Temp (°C) 9.5

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>NOTE</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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

AS  
Custodian Printed Name

6/13/24  
Date/Time



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

Project: Noble - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**AST01@0-6"**  
**2406192-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0408	06/14/24	06/15/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0423	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0387	96.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0410	06/14/24	06/18/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.8	94.5 %	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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**AST01@0-6"**  
**2406192-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0406	06/14/24	06/14/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0218	65.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0190	57.2 %	40-150		"	"	"	"	

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

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0419	06/14/24	06/18/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Hagemester USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**AST01@0-6"**  
**2406192-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.84	0.200	mg/kg dry	1	BHF0416	06/14/24	06/17/24	EPA 6020B	
Barium	23.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.12	0.400	"	"	"	"	"	"	
Lead	3.31	0.200	"	"	"	"	"	"	
Nickel	1.92	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	9.97	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0458	06/17/24	06/17/24	EPA 7196A	

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

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	160	0.0500	mg/L dry	1	BHF0469	06/17/24	06/19/24	EPA 6020B	
Magnesium	38.2	0.0500	"	"	"	"	"	"	
Sodium	0.466	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.00859	0.00100	units	1	BHF0612	06/20/24	06/20/24	Calculation	

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

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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**AST01@0-6"**  
**2406192-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	<b>90.0</b>			%	1	BHF0421	06/14/24	06/14/24	Calculation	

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

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	<b>0.0853</b>	0.0100		mmhos/cm	1	BHF0471	06/17/24	06/18/24	EPA 120.1	

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

Date Sampled: **06/13/24 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	<b>8.22</b>			pH Units	1	BHF0470	06/17/24	06/18/24	EPA 9045D	

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 - Hagemester USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**AST02@0-6"**  
**2406192-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0408	06/14/24	06/15/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0417	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0391	97.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0392	98.1 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0410	06/14/24	06/18/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.3	98.0 %	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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**AST02@0-6"**  
**2406192-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0406	06/14/24	06/14/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0204	61.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0195	58.4 %	40-150		"	"	"	"	

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

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0419	06/14/24	06/18/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Hagemester USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**AST02@0-6"**  
**2406192-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.36	0.200	mg/kg dry	1	BHF0416	06/14/24	06/17/24	EPA 6020B	
Barium	32.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.00	0.400	"	"	"	"	"	"	
Lead	5.16	0.200	"	"	"	"	"	"	
Nickel	1.85	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	9.25	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0458	06/17/24	06/17/24	EPA 7196A	

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

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	162	0.0500	mg/L dry	1	BHF0469	06/17/24	06/19/24	EPA 6020B	
Magnesium	24.5	0.0500	"	"	"	"	"	"	
Sodium	1.65	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0319	0.00100	units	1	BHF0612	06/20/24	06/20/24	Calculation	

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

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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**AST02@0-6"**  
**2406192-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	93.2			%	1	BHF0421	06/14/24	06/14/24	Calculation	

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

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.0828	0.0100		mmhos/cm	1	BHF0471	06/17/24	06/18/24	EPA 120.1	

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

Date Sampled: **06/13/24 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.89			pH Units	1	BHF0470	06/17/24	06/18/24	EPA 9045D	

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 - Hagemester USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**SEP01-DL@3'**  
**2406192-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0408	06/14/24	06/15/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0536	134 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0423	106 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0410	06/14/24	06/18/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.5	92.0 %		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 - Hagemester USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**SEP01-DL@3'**  
**2406192-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0406	06/14/24	06/14/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	"
<b>Benzo (a) anthracene</b>	<b>0.0108</b>	0.00500	"	"	"	"	"	"	"
<b>Benzo (a) pyrene</b>	<b>0.00567</b>	0.00500	"	"	"	"	"	"	"
<b>Benzo (b) fluoranthene</b>	<b>0.00890</b>	0.00500	"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	"
<b>Chrysene</b>	<b>0.00941</b>	0.00500	"	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	"
<b>Fluoranthene</b>	<b>0.0259</b>	0.00500	"	"	"	"	"	"	"
Fluorene	ND	0.00500	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	"
<b>Pyrene</b>	<b>0.0252</b>	0.00500	"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	"

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0209	62.6 %	40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10	0.0193	58.0 %	40-150		"	"	"	"	"

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

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0419	06/14/24	06/18/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**SEP01-DL@3'**  
**2406192-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.76	0.200	mg/kg dry	1	BHF0416	06/14/24	06/17/24	EPA 6020B	
Barium	46.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.34	0.400	"	"	"	"	"	"	
Lead	4.32	0.200	"	"	"	"	"	"	
Nickel	3.13	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	14.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0458	06/17/24	06/17/24	EPA 7196A	

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

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.6	0.0500	mg/L dry	1	BHF0469	06/17/24	06/19/24	EPA 6020B	
Magnesium	9.43	0.0500	"	"	"	"	"	"	
Sodium	6.29	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.225	0.00100	units	1	BHF0612	06/20/24	06/20/24	Calculation	

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

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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**SEP01-DL@3'**  
**2406192-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>89.2</b>		%	1	BHF0421	06/14/24	06/14/24	Calculation	

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

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.505</b>	0.0100	mmhos/cm	1	BHF0471	06/17/24	06/18/24	EPA 120.1	

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

Date Sampled: **06/13/24 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>8.00</b>		pH Units	1	BHF0470	06/17/24	06/18/24	EPA 9045D	

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 - Hagemester USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**PWV01-B@4'**  
**2406192-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0408	06/14/24	06/15/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.015</b>	0.010		"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.0064</b>	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0441	110 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	102 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0410	06/14/24	06/18/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.3	90.7 %		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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**PWV01-B@4'**  
**2406192-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0406	06/14/24	06/14/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0224	67.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0204	61.3 %	40-150		"	"	"	"	

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

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0419	06/14/24	06/18/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	<b>2.96</b>	0.200	mg/kg dry	1	BHF0416	06/14/24	06/17/24	EPA 6020B	
Barium	<b>62.3</b>	0.400	"	"	"	"	"	"	

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**PWV01-B@4'**  
**2406192-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cadmium	ND	0.200	mg/kg dry	1	BHF0416	06/14/24	06/17/24	EPA 6020B	
<b>Copper</b>	<b>3.08</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>4.34</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>3.47</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>13.4</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0458	06/17/24	06/17/24	EPA 7196A	

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

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>340</b>	0.0500	mg/L dry	1	BHF0469	06/17/24	06/19/24	EPA 6020B	
<b>Magnesium</b>	<b>48.1</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>20.9</b>	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>0.281</b>	0.00100	units	1	BHF0612	06/20/24	06/20/24	Calculation	

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

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>83.7</b>		%	1	BHF0421	06/14/24	06/14/24	Calculation	

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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**PWV01-B@4'**  
**2406192-04 (Soil)**

**Summit Scientific**

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

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

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.248</b>	0.0100	mmhos/cm	1	BHF0471	06/17/24	06/18/24	EPA 120.1	

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

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>9.05</b>		pH Units	1	BHF0470	06/17/24	06/18/24	EPA 9045D	

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**PWV01-B@4'**  
**2406192-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
1-Methylnaphthalene	0.00574	0.00500		mg/kg	1	BHF0781	06/25/24	06/25/24	EPA 8270D SIM	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **06/13/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 2-Methylnaphthalene-d10	0.0286	85.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0196	58.9 %		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 - Hagemester USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**PWV01-N@2.5'**  
**2406192-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0408	06/14/24	06/15/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.0064</b>	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.54</b>	0.50	"	"	"	"	"	"	

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0468	117 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0418	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0418	104 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0410	06/14/24	06/18/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.55	76.4 %	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 - Hagemester USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**PWV01-N@2.5'**  
**2406192-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0406	06/14/24	06/14/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0169</b>	0.00500	"	"	"	"	"	"	

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0170	51.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0174	52.2 %	40-150		"	"	"	"	

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

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0419	06/14/24	06/18/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	<b>1.79</b>	0.200	mg/kg dry	1	BHF0416	06/14/24	06/17/24	EPA 6020B	

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 - Hagemester USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**PWV01-N@2.5'**  
**2406192-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	29.3	0.400	mg/kg dry	1	BHF0416	06/14/24	06/17/24	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.39	0.400	"	"	"	"	"	"	
Lead	3.45	0.200	"	"	"	"	"	"	
Nickel	1.96	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	11.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0458	06/17/24	06/17/24	EPA 7196A	

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

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	238	0.0500	mg/L dry	1	BHF0469	06/17/24	06/19/24	EPA 6020B	
Magnesium	36.9	0.0500	"	"	"	"	"	"	
Sodium	68.1	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.08	0.00100	units	1	BHF0612	06/20/24	06/20/24	Calculation	

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

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**PWV01-N@2.5'**  
**2406192-05 (Soil)**

**Summit Scientific**

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

% Solids	90.5	%	1	BHF0421	06/14/24	06/14/24	Calculation
----------	------	---	---	---------	----------	----------	-------------

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

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.320	0.0100	mmhos/cm	1	BHF0471	06/17/24	06/18/24	EPA 120.1	

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

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.47		pH Units	1	BHF0470	06/17/24	06/18/24	EPA 9045D	

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**PWV01-N@2.5'**  
**2406192-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>1-Methylnaphthalene</b>	<b>0.00580</b>	0.00500	mg/kg	1	BHF0781	06/25/24	06/25/24	EPA 8270D SIM	

Date Sampled: **06/13/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0198	59.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0193	57.8 %	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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**BKG01@1'**  
**2406192-09 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **06/13/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>1.96</b>	0.181	mg/kg dry	1	BHF0416	06/14/24	06/17/24	EPA 6020B	
<b>Barium</b>	<b>21.5</b>	0.362	"	"	"	"	"	"	
Cadmium	ND	0.181	"	"	"	"	"	"	
<b>Copper</b>	<b>2.13</b>	0.362	"	"	"	"	"	"	
<b>Lead</b>	<b>4.05</b>	0.181	"	"	"	"	"	"	
<b>Nickel</b>	<b>2.01</b>	0.362	"	"	"	"	"	"	
Silver	ND	0.0181	"	"	"	"	"	"	
<b>Zinc</b>	<b>10.2</b>	0.362	"	"	"	"	"	"	
Selenium	ND	0.236	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/13/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0458	06/17/24	06/17/24	EPA 7196A	

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

Date Sampled: **06/13/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>115</b>	0.0500	mg/L dry	1	BHF0469	06/17/24	06/19/24	EPA 6020B	
<b>Magnesium</b>	<b>34.9</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>1.99</b>	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/13/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Sodium Adsorption Ratio</b>	<b>0.0417</b>	0.00100	units	1	BHF0612	06/20/24	06/20/24	Calculation	

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**BKG01@1'**  
**2406192-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	95.5			%	1	BHF0421	06/14/24	06/14/24	Calculation	

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

Date Sampled: **06/13/24 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.194	0.0100		mmhos/cm	1	BHF0471	06/17/24	06/18/24	EPA 120.1	

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

Date Sampled: **06/13/24 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.71			pH Units	1	BHF0470	06/17/24	06/18/24	EPA 9045D	

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**BKG01@2'**  
**2406192-10 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **06/13/24 12:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>2.19</b>	0.200	mg/kg dry	1	BHF0416	06/14/24	06/17/24	EPA 6020B	
<b>Barium</b>	<b>12.9</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>1.70</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>2.53</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>1.49</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>7.62</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/13/24 12:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0458	06/17/24	06/17/24	EPA 7196A	

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

Date Sampled: **06/13/24 12:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>71.5</b>	0.0500	mg/L dry	1	BHF0469	06/17/24	06/19/24	EPA 6020B	
<b>Magnesium</b>	<b>14.2</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>3.32</b>	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/13/24 12:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Sodium Adsorption Ratio</b>	<b>0.0938</b>	0.00100	units	1	BHF0612	06/20/24	06/20/24	Calculation	

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**BKG01@2'**  
**2406192-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 12:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	96.4			%	1	BHF0421	06/14/24	06/14/24	Calculation	

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

Date Sampled: **06/13/24 12:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.185	0.0100		mmhos/cm	1	BHF0471	06/17/24	06/18/24	EPA 120.1	

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

Date Sampled: **06/13/24 12:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.18			pH Units	1	BHF0470	06/17/24	06/18/24	EPA 9045D	

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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**BKG01@3'**  
**2406192-11 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **06/13/24 12:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>2.34</b>	0.200	mg/kg dry	1	BHF0416	06/14/24	06/17/24	EPA 6020B	
<b>Barium</b>	<b>43.4</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>2.85</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>5.29</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>2.61</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>12.4</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/13/24 12:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0458	06/17/24	06/17/24	EPA 7196A	

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

Date Sampled: **06/13/24 12:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>70.4</b>	0.0500	mg/L dry	1	BHF0469	06/17/24	06/19/24	EPA 6020B	
<b>Magnesium</b>	<b>8.45</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>14.7</b>	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/13/24 12:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Sodium Adsorption Ratio</b>	<b>0.441</b>	0.00100	units	1	BHF0612	06/20/24	06/20/24	Calculation	

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**BKG01@3'**  
**2406192-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	<b>89.8</b>			%	1	BHF0421	06/14/24	06/14/24	Calculation	

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

Date Sampled: **06/13/24 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	<b>0.818</b>	0.0100		mmhos/cm	1	BHF0471	06/17/24	06/18/24	EPA 120.1	

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

Date Sampled: **06/13/24 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	<b>7.96</b>			pH Units	1	BHF0470	06/17/24	06/18/24	EPA 9045D	

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 - Hagemester USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**BKG01@4'**  
**2406192-12 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **06/13/24 12:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.77	0.200	mg/kg dry	1	BHF0416	06/14/24	06/17/24	EPA 6020B	
Barium	30.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.39	0.400	"	"	"	"	"	"	
Lead	3.16	0.200	"	"	"	"	"	"	
Nickel	2.24	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	9.61	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/13/24 12:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0458	06/17/24	06/17/24	EPA 7196A	

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

Date Sampled: **06/13/24 12:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	139	0.0500	mg/L dry	1	BHF0469	06/17/24	06/19/24	EPA 6020B	
Magnesium	12.8	0.0500	"	"	"	"	"	"	
Sodium	56.0	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/13/24 12:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	1.22	0.00100	units	1	BHF0612	06/20/24	06/20/24	Calculation	

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

**BKG01@4'**  
**2406192-12 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/13/24 12:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	92.7			%	1	BHF0421	06/14/24	06/14/24	Calculation	

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

Date Sampled: **06/13/24 12:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.38	0.0100		mmhos/cm	1	BHF0471	06/17/24	06/18/24	EPA 120.1	

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

Date Sampled: **06/13/24 12:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.90			pH Units	1	BHF0470	06/17/24	06/18/24	EPA 9045D	

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

#### Summit Scientific

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

#### Batch BHF0408 - EPA 5030 Soil MS

##### Blank (BHF0408-BLK1)

Prepared: 06/14/24 Analyzed: 06/15/24

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0400		103	50-150				
Surrogate: Toluene-d8	0.0384		"	0.0400		96.1	50-150				
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	50-150				

##### LCS (BHF0408-BS1)

Prepared: 06/14/24 Analyzed: 06/15/24

Benzene	0.0945	0.0020	mg/kg	0.100		94.5	70-130				
Toluene	0.101	0.0050	"	0.100		101	70-130				
Ethylbenzene	0.0981	0.0050	"	0.100		98.1	70-130				
m,p-Xylene	0.194	0.010	"	0.200		97.0	70-130				
o-Xylene	0.0962	0.0050	"	0.100		96.2	70-130				
1,2,4-Trimethylbenzene	0.0926	0.0050	"	0.100		92.6	70-130				
1,3,5-Trimethylbenzene	0.0929	0.0050	"	0.100		92.9	70-130				
Naphthalene	0.0838	0.0038	"	0.100		83.8	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0400		101	50-150				
Surrogate: Toluene-d8	0.0408		"	0.0400		102	50-150				
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	50-150				

##### Matrix Spike (BHF0408-MS1)

Source: 2406192-01

Prepared: 06/14/24 Analyzed: 06/15/24

Benzene	0.0870	0.0020	mg/kg	0.100	ND	87.0	70-130				
Toluene	0.0912	0.0050	"	0.100	ND	91.2	70-130				
Ethylbenzene	0.0919	0.0050	"	0.100	ND	91.9	70-130				
m,p-Xylene	0.171	0.010	"	0.200	ND	85.3	70-130				
o-Xylene	0.0893	0.0050	"	0.100	ND	89.3	70-130				
1,2,4-Trimethylbenzene	0.0787	0.0050	"	0.100	ND	78.7	70-130				
1,3,5-Trimethylbenzene	0.0825	0.0050	"	0.100	ND	82.5	70-130				
Naphthalene	0.0960	0.0038	"	0.100	ND	96.0	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0417		"	0.0400		104	50-150				
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150				
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	50-150				

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

**Summit Scientific**

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

**Batch BHF0408 - EPA 5030 Soil MS**

Matrix Spike Dup (BHF0408-MSD1)	Source: 2406192-01			Prepared: 06/14/24 Analyzed: 06/15/24						
Benzene	0.0890	0.0020	mg/kg	0.100	ND	89.0	70-130	2.28	30	
Toluene	0.0935	0.0050	"	0.100	ND	93.5	70-130	2.50	30	
Ethylbenzene	0.0964	0.0050	"	0.100	ND	96.4	70-130	4.78	30	
m,p-Xylene	0.182	0.010	"	0.200	ND	91.0	70-130	6.50	30	
o-Xylene	0.0945	0.0050	"	0.100	ND	94.5	70-130	5.68	30	
1,2,4-Trimethylbenzene	0.0824	0.0050	"	0.100	ND	82.4	70-130	4.62	30	
1,3,5-Trimethylbenzene	0.0874	0.0050	"	0.100	ND	87.4	70-130	5.79	30	
Naphthalene	0.0994	0.0038	"	0.100	ND	99.4	70-130	3.53	30	
Surrogate: 1,2-Dichloroethane-d4	0.0397		"	0.0400		99.3	50-150			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.4	50-150			

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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

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

**Batch BHF0410 - EPA 3550A**

**Blank (BHF0410-BLK1)**

Prepared: 06/14/24 Analyzed: 06/17/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	8.96		"	12.5		71.7	30-150				

**LCS (BHF0410-BS1)**

Prepared: 06/14/24 Analyzed: 06/18/24

C10-C28 (DRO)	442	50	mg/kg	500		88.4	70-130				
Surrogate: <i>o</i> -Terphenyl	15.9		"	12.5		127	30-150				

**Matrix Spike (BHF0410-MS1)**

Source: 2406192-01

Prepared: 06/14/24 Analyzed: 06/18/24

C10-C28 (DRO)	498	50	mg/kg	500	48.8	89.9	70-130				
Surrogate: <i>o</i> -Terphenyl	14.7		"	12.5		117	30-150				

**Matrix Spike Dup (BHF0410-MSD1)**

Source: 2406192-01

Prepared: 06/14/24 Analyzed: 06/18/24

C10-C28 (DRO)	532	50	mg/kg	500	48.8	96.6	70-130	6.47	20		
Surrogate: <i>o</i> -Terphenyl	16.1		"	12.5		129	30-150				

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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

**Summit Scientific**

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

**Batch BHF0406 - EPA 5030 Soil MS**

**Blank (BHF0406-BLK1)**

Prepared & Analyzed: 06/14/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0190		"	0.0333		57.1	40-150			
Surrogate: Fluoranthene-d10	0.0215		"	0.0333		64.5	40-150			

**LCS (BHF0406-BS1)**

Prepared & Analyzed: 06/14/24

Acenaphthene	0.0190	0.00500	mg/kg	0.0333		57.1	31-137			
Anthracene	0.0191	0.00500	"	0.0333		57.4	30-120			
Benzo (a) anthracene	0.0218	0.00500	"	0.0333		65.3	30-120			
Benzo (a) pyrene	0.0169	0.00500	"	0.0333		50.7	30-120			
Benzo (b) fluoranthene	0.0174	0.00500	"	0.0333		52.2	30-120			
Benzo (k) fluoranthene	0.0192	0.00500	"	0.0333		57.7	30-120			
Chrysene	0.0213	0.00500	"	0.0333		63.8	30-120			
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333		46.7	30-120			
Fluoranthene	0.0196	0.00500	"	0.0333		58.8	30-120			
Fluorene	0.0178	0.00500	"	0.0333		53.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0191	0.00500	"	0.0333		57.2	30-120			
Pyrene	0.0238	0.00500	"	0.0333		71.3	35-142			
1-Methylnaphthalene	0.0196	0.00500	"	0.0333		58.8	35-142			
2-Methylnaphthalene	0.0183	0.00500	"	0.0333		55.0	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0205		"	0.0333		61.6	40-150			
Surrogate: Fluoranthene-d10	0.0216		"	0.0333		64.8	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 - Hagemester USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

**Summit Scientific**

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

**Batch BHF0406 - EPA 5030 Soil MS**

<b>Matrix Spike (BHF0406-MS1)</b>	<b>Source: 2406189-01</b>			<b>Prepared &amp; Analyzed: 06/14/24</b>						
Acenaphthene	0.0254	0.00500	mg/kg	0.0333	ND	76.1	31-137			
Anthracene	0.0243	0.00500	"	0.0333	ND	72.8	30-120			
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	ND	76.8	30-120			
Benzo (a) pyrene	0.0202	0.00500	"	0.0333	ND	60.5	30-120			
Benzo (b) fluoranthene	0.0203	0.00500	"	0.0333	ND	60.8	30-120			
Benzo (k) fluoranthene	0.0219	0.00500	"	0.0333	ND	65.6	30-120			
Chrysene	0.0255	0.00500	"	0.0333	ND	76.5	30-120			
Dibenz (a,h) anthracene	0.0177	0.00500	"	0.0333	ND	53.1	30-120			
Fluoranthene	0.0239	0.00500	"	0.0333	ND	71.7	30-120			
Fluorene	0.0176	0.00500	"	0.0333	ND	52.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0195	0.00500	"	0.0333	ND	58.6	30-120			
Pyrene	0.0269	0.00500	"	0.0333	ND	80.8	35-142			
1-Methylnaphthalene	0.0281	0.00500	"	0.0333	ND	84.2	15-130			
2-Methylnaphthalene	0.0272	0.00500	"	0.0333	ND	81.7	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0296</i>		<i>"</i>	<i>0.0333</i>		<i>88.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0264</i>		<i>"</i>	<i>0.0333</i>		<i>79.2</i>	<i>40-150</i>			

<b>Matrix Spike Dup (BHF0406-MSD1)</b>	<b>Source: 2406189-01</b>			<b>Prepared &amp; Analyzed: 06/14/24</b>						
Acenaphthene	0.0215	0.00500	mg/kg	0.0333	ND	64.5	31-137	16.5	30	
Anthracene	0.0197	0.00500	"	0.0333	ND	59.2	30-120	20.6	30	
Benzo (a) anthracene	0.0213	0.00500	"	0.0333	ND	63.8	30-120	18.5	30	
Benzo (a) pyrene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	20.5	30	
Benzo (b) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	20.5	30	
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333	ND	53.7	30-120	19.9	30	
Chrysene	0.0211	0.00500	"	0.0333	ND	63.2	30-120	18.9	30	
Dibenz (a,h) anthracene	0.0151	0.00500	"	0.0333	ND	45.3	30-120	15.9	30	
Fluoranthene	0.0195	0.00500	"	0.0333	ND	58.6	30-120	20.0	30	
Fluorene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	11.5	30	
Indeno (1,2,3-cd) pyrene	0.0174	0.00500	"	0.0333	ND	52.1	30-120	11.8	30	
Pyrene	0.0232	0.00500	"	0.0333	ND	69.5	35-142	15.1	30	
1-Methylnaphthalene	0.0207	0.00500	"	0.0333	ND	62.1	15-130	30.2	50	
2-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.4	15-130	25.2	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0232</i>		<i>"</i>	<i>0.0333</i>		<i>69.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0214</i>		<i>"</i>	<i>0.0333</i>		<i>64.1</i>	<i>40-150</i>			

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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

**Summit Scientific**

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

**Batch BHF0781 - EPA 5030 Soil MS**

**Blank (BHF0781-BLK1)**

Prepared & Analyzed: 06/25/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0225		"	0.0333		67.5	40-150			
Surrogate: Fluoranthene-d10	0.0222		"	0.0333		66.5	40-150			

**LCS (BHF0781-BS1)**

Prepared & Analyzed: 06/25/24

Acenaphthene	0.0210	0.00500	mg/kg	0.0333		63.1	31-137			
Anthracene	0.0210	0.00500	"	0.0333		63.0	30-120			
Benzo (a) anthracene	0.0215	0.00500	"	0.0333		64.5	30-120			
Benzo (a) pyrene	0.0195	0.00500	"	0.0333		58.6	30-120			
Benzo (b) fluoranthene	0.0198	0.00500	"	0.0333		59.4	30-120			
Benzo (k) fluoranthene	0.0201	0.00500	"	0.0333		60.4	30-120			
Chrysene	0.0196	0.00500	"	0.0333		58.7	30-120			
Dibenz (a,h) anthracene	0.0178	0.00500	"	0.0333		53.3	30-120			
Fluoranthene	0.0208	0.00500	"	0.0333		62.5	30-120			
Fluorene	0.0211	0.00500	"	0.0333		63.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0175	0.00500	"	0.0333		52.5	30-120			
Pyrene	0.0199	0.00500	"	0.0333		59.6	35-142			
1-Methylnaphthalene	0.0227	0.00500	"	0.0333		68.0	35-142			
2-Methylnaphthalene	0.0232	0.00500	"	0.0333		69.7	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0235		"	0.0333		70.6	40-150			
Surrogate: Fluoranthene-d10	0.0221		"	0.0333		66.4	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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

**Summit Scientific**

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

**Batch BHF0781 - EPA 5030 Soil MS**

<b>Matrix Spike (BHF0781-MS1)</b>	<b>Source: 2406354-01</b>			<b>Prepared &amp; Analyzed: 06/25/24</b>							
Acenaphthene	0.0157	0.00500	mg/kg	0.0333	ND	47.1	31-137				
Anthracene	0.0149	0.00500	"	0.0333	ND	44.8	30-120				
Benzo (a) anthracene	0.0161	0.00500	"	0.0333	ND	48.2	30-120				
Benzo (a) pyrene	0.0141	0.00500	"	0.0333	ND	42.3	30-120				
Benzo (b) fluoranthene	0.0134	0.00500	"	0.0333	ND	40.2	30-120				
Benzo (k) fluoranthene	0.0143	0.00500	"	0.0333	ND	43.0	30-120				
Chrysene	0.0151	0.00500	"	0.0333	ND	45.2	30-120				
Dibenz (a,h) anthracene	0.0133	0.00500	"	0.0333	ND	39.9	30-120				
Fluoranthene	0.0142	0.00500	"	0.0333	ND	42.5	30-120				
Fluorene	0.0157	0.00500	"	0.0333	ND	47.0	30-120				
Indeno (1,2,3-cd) pyrene	0.0134	0.00500	"	0.0333	ND	40.1	30-120				
Pyrene	0.0151	0.00500	"	0.0333	ND	45.3	35-142				
1-Methylnaphthalene	0.0167	0.00500	"	0.0333	ND	50.0	15-130				
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.5	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0167</i>		<i>"</i>	<i>0.0333</i>		<i>50.0</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0153</i>		<i>"</i>	<i>0.0333</i>		<i>46.0</i>	<i>40-150</i>				

<b>Matrix Spike Dup (BHF0781-MSD1)</b>	<b>Source: 2406354-01</b>			<b>Prepared &amp; Analyzed: 06/25/24</b>							
Acenaphthene	0.0179	0.00500	mg/kg	0.0333	ND	53.6	31-137	13.0	30		
Anthracene	0.0176	0.00500	"	0.0333	ND	52.7	30-120	16.1	30		
Benzo (a) anthracene	0.0184	0.00500	"	0.0333	ND	55.2	30-120	13.6	30		
Benzo (a) pyrene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	15.9	30		
Benzo (b) fluoranthene	0.0166	0.00500	"	0.0333	ND	49.8	30-120	21.2	30		
Benzo (k) fluoranthene	0.0170	0.00500	"	0.0333	ND	51.1	30-120	17.2	30		
Chrysene	0.0169	0.00500	"	0.0333	ND	50.8	30-120	11.6	30		
Dibenz (a,h) anthracene	0.0152	0.00500	"	0.0333	ND	45.5	30-120	13.1	30		
Fluoranthene	0.0171	0.00500	"	0.0333	ND	51.2	30-120	18.5	30		
Fluorene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	9.90	30		
Indeno (1,2,3-cd) pyrene	0.0155	0.00500	"	0.0333	ND	46.6	30-120	15.0	30		
Pyrene	0.0173	0.00500	"	0.0333	ND	51.9	35-142	13.5	30		
1-Methylnaphthalene	0.0194	0.00500	"	0.0333	ND	58.2	15-130	15.2	50		
2-Methylnaphthalene	0.0191	0.00500	"	0.0333	ND	57.3	15-130	12.7	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0201</i>		<i>"</i>	<i>0.0333</i>		<i>60.2</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0180</i>		<i>"</i>	<i>0.0333</i>		<i>54.0</i>	<i>40-150</i>				

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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

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

**Batch BHF0937 - EPA 5030 Soil MS**

**Blank (BHF0937-BLK1)**

Prepared & Analyzed: 06/28/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0273</i>		<i>"</i>	<i>0.0333</i>		<i>81.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0232</i>		<i>"</i>	<i>0.0333</i>		<i>69.5</i>	<i>40-150</i>			

**LCS (BHF0937-BS1)**

Prepared & Analyzed: 06/28/24

Acenaphthene	0.0224	0.00500	mg/kg	0.0333		67.1	31-137			
Anthracene	0.0215	0.00500	"	0.0333		64.6	30-120			
Benzo (a) anthracene	0.0262	0.00500	"	0.0333		78.7	30-120			
Benzo (a) pyrene	0.0232	0.00500	"	0.0333		69.5	30-120			
Benzo (b) fluoranthene	0.0236	0.00500	"	0.0333		70.9	30-120			
Benzo (k) fluoranthene	0.0242	0.00500	"	0.0333		72.7	30-120			
Chrysene	0.0253	0.00500	"	0.0333		75.9	30-120			
Dibenz (a,h) anthracene	0.0199	0.00500	"	0.0333		59.7	30-120			
Fluoranthene	0.0224	0.00500	"	0.0333		67.1	30-120			
Fluorene	0.0320	0.00500	"	0.0333		96.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0121	0.00500	"	0.0333		36.2	30-120			
Pyrene	0.0264	0.00500	"	0.0333		79.1	35-142			
1-Methylnaphthalene	0.0219	0.00500	"	0.0333		65.8	35-142			
2-Methylnaphthalene	0.0230	0.00500	"	0.0333		69.1	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0210</i>		<i>"</i>	<i>0.0333</i>		<i>62.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0232</i>		<i>"</i>	<i>0.0333</i>		<i>69.6</i>	<i>40-150</i>			

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

**Summit Scientific**

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

**Batch BHF0937 - EPA 5030 Soil MS**

<b>Matrix Spike (BHF0937-MS1)</b>	<b>Source: 2406445-01</b>			<b>Prepared &amp; Analyzed: 06/28/24</b>						
Acenaphthene	0.0212	0.00500	mg/kg	0.0333	ND	63.6	31-137			
Anthracene	0.0220	0.00500	"	0.0333	ND	66.0	30-120			
Benzo (a) anthracene	0.0252	0.00500	"	0.0333	ND	75.5	30-120			
Benzo (a) pyrene	0.0222	0.00500	"	0.0333	ND	66.7	30-120			
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.2	30-120			
Benzo (k) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.7	30-120			
Chrysene	0.0240	0.00500	"	0.0333	ND	72.1	30-120			
Dibenz (a,h) anthracene	0.0244	0.00500	"	0.0333	ND	73.3	30-120			
Fluoranthene	0.0214	0.00500	"	0.0333	ND	64.2	30-120			
Fluorene	0.0259	0.00500	"	0.0333	ND	77.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0167	0.00500	"	0.0333	ND	50.2	30-120			
Pyrene	0.0262	0.00500	"	0.0333	ND	78.5	35-142			
1-Methylnaphthalene	0.0233	0.00500	"	0.0333	ND	69.8	15-130			
2-Methylnaphthalene	0.0251	0.00500	"	0.0333	ND	75.2	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0222</i>		<i>"</i>	<i>0.0333</i>		<i>66.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0218</i>		<i>"</i>	<i>0.0333</i>		<i>65.4</i>	<i>40-150</i>			

<b>Matrix Spike Dup (BHF0937-MSD1)</b>	<b>Source: 2406445-01</b>			<b>Prepared &amp; Analyzed: 06/28/24</b>						
Acenaphthene	0.0189	0.00500	mg/kg	0.0333	ND	56.8	31-137	11.3	30	
Anthracene	0.0201	0.00500	"	0.0333	ND	60.2	30-120	9.20	30	
Benzo (a) anthracene	0.0264	0.00500	"	0.0333	ND	79.3	30-120	4.85	30	
Benzo (a) pyrene	0.0236	0.00500	"	0.0333	ND	70.9	30-120	6.12	30	
Benzo (b) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.6	30-120	0.598	30	
Benzo (k) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.3	30-120	11.3	30	
Chrysene	0.0261	0.00500	"	0.0333	ND	78.3	30-120	8.31	30	
Dibenz (a,h) anthracene	0.0225	0.00500	"	0.0333	ND	67.6	30-120	8.12	30	
Fluoranthene	0.0197	0.00500	"	0.0333	ND	59.2	30-120	8.07	30	
Fluorene	0.0245	0.00500	"	0.0333	ND	73.6	30-120	5.26	30	
Indeno (1,2,3-cd) pyrene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	1.29	30	
Pyrene	0.0331	0.00500	"	0.0333	ND	99.3	35-142	23.4	30	
1-Methylnaphthalene	0.0186	0.00500	"	0.0333	ND	55.7	15-130	22.5	50	
2-Methylnaphthalene	0.0166	0.00500	"	0.0333	ND	49.9	15-130	40.4	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0184</i>		<i>"</i>	<i>0.0333</i>		<i>55.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0182</i>		<i>"</i>	<i>0.0333</i>		<i>54.7</i>	<i>40-150</i>			

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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

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

**Batch BHF0419 - EPA 3050B**

**Blank (BHF0419-BLK1)**

Prepared: 06/14/24 Analyzed: 06/17/24

Boron ND 2.00 mg/L

**LCS (BHF0419-BS1)**

Prepared: 06/14/24 Analyzed: 06/17/24

Boron 4.24 2.00 mg/L 5.00 84.8 80-120

**Duplicate (BHF0419-DUP1)**

**Source: 2406182-01**

Prepared: 06/14/24 Analyzed: 06/17/24

Boron 0.591 2.00 mg/L 0.500 16.8 20

**Matrix Spike (BHF0419-MS1)**

**Source: 2406182-01**

Prepared: 06/14/24 Analyzed: 06/17/24

Boron 5.20 2.00 mg/L 4.97 0.500 94.7 75-125

**Matrix Spike Dup (BHF0419-MSD1)**

**Source: 2406182-01**

Prepared: 06/14/24 Analyzed: 06/17/24

Boron 5.59 2.00 mg/L 4.97 0.500 102 75-125 7.13 25

Summit Scientific

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



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

Project: Noble - Hagemester USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

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

**Batch BHF0416 - EPA 3050B**

**Blank (BHF0416-BLK1)**

Prepared: 06/14/24 Analyzed: 06/17/24

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

**LCS (BHF0416-BS1)**

Prepared: 06/14/24 Analyzed: 06/17/24

Arsenic	40.9	0.200	mg/kg wet	40.0		102	80-120
Barium	37.1	0.400	"	40.0		92.9	80-120
Cadmium	1.96	0.200	"	2.00		97.8	80-120
Copper	38.0	0.400	"	40.0		94.9	80-120
Lead	18.6	0.200	"	20.0		93.2	80-120
Nickel	38.0	0.400	"	40.0		94.9	80-120
Silver	1.93	0.0200	"	2.00		96.4	80-120
Zinc	37.3	0.400	"	40.0		93.3	80-120
Selenium	3.78	0.260	"	4.00		94.5	80-120

**Duplicate (BHF0416-DUP1)**

Source: 2406181-01

Prepared: 06/14/24 Analyzed: 06/17/24

Arsenic	4.31	0.200	mg/kg dry		3.85		11.1	20
Barium	87.9	0.400	"		81.0		8.18	20
Cadmium	0.283	0.200	"		0.267		6.05	20
Copper	5.13	0.400	"		5.20		1.36	20
Lead	7.23	0.200	"		8.12		11.6	20
Nickel	5.29	0.400	"		5.38		1.68	20
Silver	0.0202	0.0200	"		0.0196		3.02	20
Zinc	20.9	0.400	"		21.6		3.39	20
Selenium	ND	0.260	"		ND			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 - Hagemester USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

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

**Batch BHF0416 - EPA 3050B**

**Matrix Spike (BHF0416-MS1)**

Source: 2406181-01

Prepared: 06/14/24 Analyzed: 06/17/24

Arsenic	46.9	0.200	mg/kg dry	44.0	3.85	98.0	75-125				
Barium	120	0.400	"	44.0	81.0	88.4	75-125				
Cadmium	2.38	0.200	"	2.20	0.267	96.2	75-125				
Copper	25.8	0.400	"	44.0	5.20	46.8	75-125				QM-05
Lead	25.1	0.200	"	22.0	8.12	77.1	75-125				
Nickel	26.3	0.400	"	44.0	5.38	47.7	75-125				QM-05
Silver	2.07	0.0200	"	2.20	0.0196	93.1	75-125				
Zinc	42.2	0.400	"	44.0	21.6	46.8	75-125				QM-05
Selenium	3.36	0.260	"	4.40	ND	76.4	75-125				

**Matrix Spike Dup (BHF0416-MSD1)**

Source: 2406181-01

Prepared: 06/14/24 Analyzed: 06/17/24

Arsenic	48.6	0.200	mg/kg dry	45.0	3.85	99.4	75-125	3.44	25		
Barium	128	0.400	"	45.0	81.0	105	75-125	6.67	25		
Cadmium	2.58	0.200	"	2.25	0.267	103	75-125	8.17	25		
Copper	27.0	0.400	"	45.0	5.20	48.4	75-125	4.52	25		QM-05
Lead	24.9	0.200	"	22.5	8.12	74.4	75-125	0.842	25		QM-07
Nickel	27.6	0.400	"	45.0	5.38	49.4	75-125	4.63	25		QM-05
Silver	2.14	0.0200	"	2.25	0.0196	94.2	75-125	3.39	25		
Zinc	43.3	0.400	"	45.0	21.6	48.1	75-125	2.53	25		QM-05
Selenium	3.40	0.260	"	4.50	ND	75.7	75-125	1.39	25		

**Post Spike (BHF0416-PS1)**

Source: 2406181-01

Prepared: 06/14/24 Analyzed: 06/17/24

Arsenic	114		ug/l	100	8.44	106	75-125				
Barium	283		"	100	177	106	75-125				
Cadmium	5.68		"	5.00	0.584	102	75-125				
Copper	65.7		"	100	11.4	54.3	75-125				QM-01
Lead	60.0		"	50.0	17.8	84.4	75-125				
Nickel	66.9		"	100	11.8	55.1	75-125				QM-01
Silver	5.03		"	5.00	0.0430	99.7	75-125				
Zinc	103		"	100	47.4	55.8	75-125				QM-01
Selenium	8.51		"	10.0	0.213	83.0	75-125				

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 - Hagemeister USX AA07-05 Tank Battery  
Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

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

**Batch BHF0458 - 3060A Mod**

**Blank (BHF0458-BLK1)**

Prepared & Analyzed: 06/17/24

Chromium, Hexavalent      ND      0.30    mg/kg wet

**LCS (BHF0458-BS1)**

Prepared & Analyzed: 06/17/24

Chromium, Hexavalent      26.2      0.30    mg/kg wet      25.0      105      80-120

**Duplicate (BHF0458-DUP1)**

**Source: 2406192-01**

Prepared & Analyzed: 06/17/24

Chromium, Hexavalent      ND      0.30    mg/kg dry      ND      20

**Matrix Spike (BHF0458-MS1)**

**Source: 2406192-01**

Prepared & Analyzed: 06/17/24

Chromium, Hexavalent      29.8      0.30    mg/kg dry      28.3      ND      105      75-125

**Matrix Spike Dup (BHF0458-MSD1)**

**Source: 2406192-01**

Prepared & Analyzed: 06/17/24

Chromium, Hexavalent      27.5      0.30    mg/kg dry      27.8      ND      99.0      75-125      7.90      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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

**Summit Scientific**

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

**Batch BHF0469 - General Preparation**

**Blank (BHF0469-BLK1)**

Prepared: 06/17/24 Analyzed: 06/19/24

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

**LCS (BHF0469-BS1)**

Prepared: 06/17/24 Analyzed: 06/19/24

Calcium	5.28	0.0500	mg/L wet	5.00	106	70-130				
Magnesium	5.47	0.0500	"	5.00	109	70-130				
Sodium	5.34	0.0500	"	5.00	107	70-130				

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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

**Summit Scientific**

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

**Batch BHF0421 - General Preparation**

**Duplicate (BHF0421-DUP1)**

**Source: 2406190-01**

Prepared & Analyzed: 06/14/24

% Solids	94.0		%		95.5			1.57	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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

**Summit Scientific**

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

**Batch BHF0471 - General Preparation**

**Blank (BHF0471-BLK1)**

Prepared: 06/17/24 Analyzed: 06/18/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHF0471-BS1)**

Prepared: 06/17/24 Analyzed: 06/18/24

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

**Duplicate (BHF0471-DUP1)**

Source: 2406166-01

Prepared: 06/17/24 Analyzed: 06/18/24

Specific Conductance (EC) 0.208 0.0100 mmhos/cm 0.209 0.288 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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

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

**Summit Scientific**

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

**Batch BHF0470 - General Preparation**

**LCS (BHF0470-BS1)**

Prepared: 06/17/24 Analyzed: 06/18/24

pH	9.15	pH Units	9.18	99.7	95-105
----	------	----------	------	------	--------

**Duplicate (BHF0470-DUP1)**

Source: 2406166-01

Prepared: 06/17/24 Analyzed: 06/18/24

pH	8.67	pH Units	8.72	0.575	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 - Hagemeister USX AA07-05 Tank Battery

Project Number: UWRWE-A4065-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 13:56

### Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- QM-01 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- 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