

FREMONT ENVIRONMENTAL INC.

December 14, 2022

Mr. Daniel Peterson
Noble Energy Inc.
2115 117th Ave.
Greeley, CO 80634

Subject: **Groundwater Data Submittal**
Howard A27-1 (Flowline)
API # 05-123-22848
NENE Sec. 27, T6N, R64W
Weld County, Colorado
Fremont Project No. C022-040
Facility #276882, Remediation #20374

Dear Mr. Peterson:

Enclosed please find a copy of the above referenced Groundwater Data Submittal for the Howard A27-1 (Flowline) site in Weld County, Colorado. The enclosed data describes the groundwater quality at the site during the recent quarterly sampling and monitoring event.

Please contact me at (303) 956-8714 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,
FREMONT ENVIRONMENTAL INC.



Paul V. Henahan, P.E.
Senior Consultant

Enclosure

TABLE 1
SUMMARY OF ORGANIC GROUNDWATER CHEMISTRY DATA
NOBLE ENERGY INC.
HOWARD A27-1, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-040

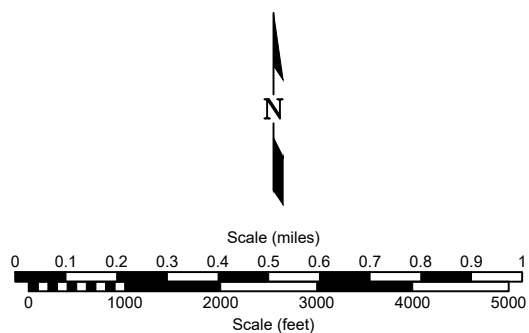
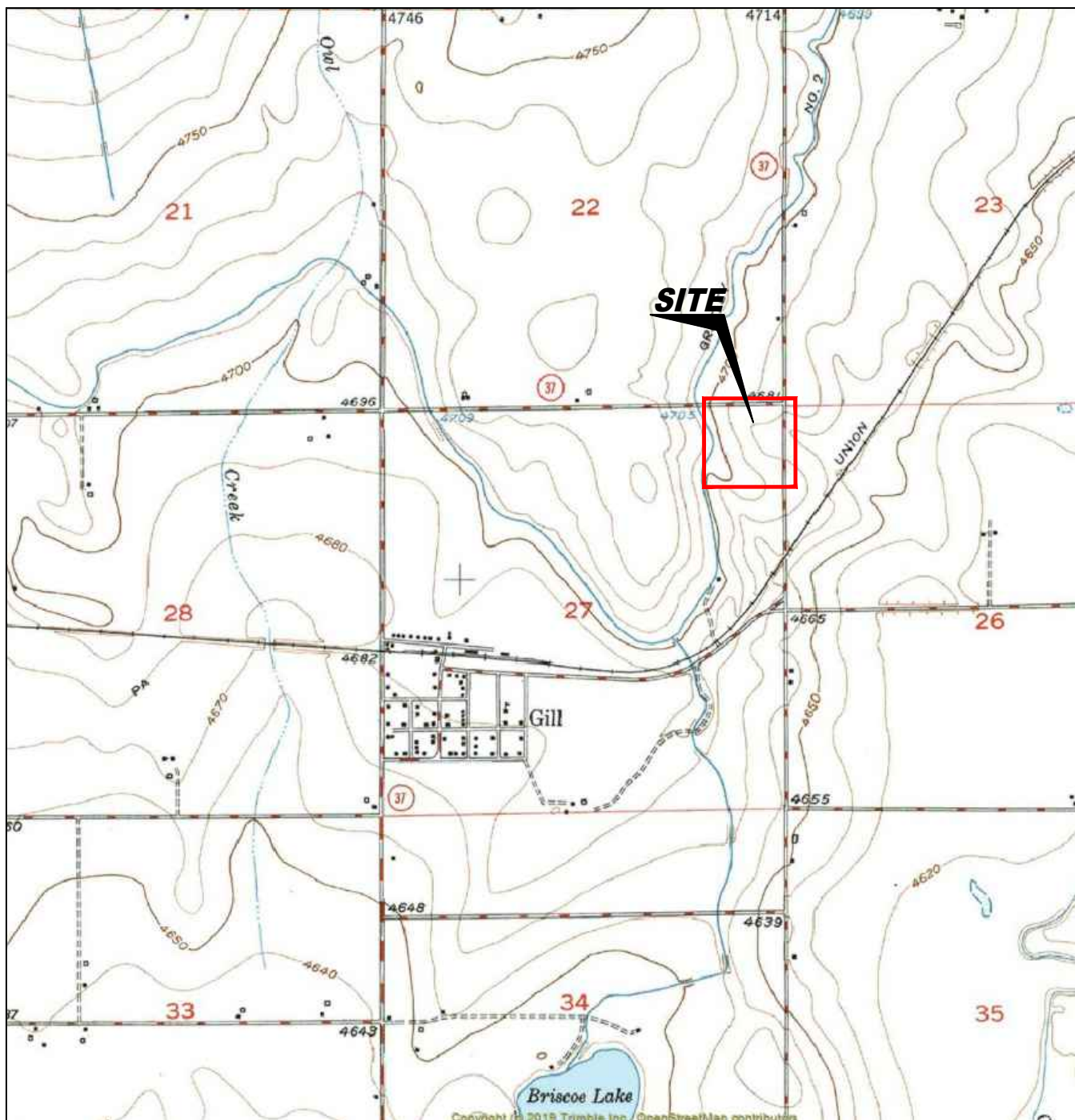
SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	NAPHTHALENE (µg/L)	1,2,4 TRIMETHYL- BENZENE (µg/L)	1,3,5 TRIMETHYL- BENZENE (µg/L)
MW-1	6/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
	9/22/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Table 915-1 Limits		5	560	700	1,400	140	67	67

Bold face values exceed the COGCC limits

NP - No Free Product

NA - Not Analyzed

NAP - Not Applicable



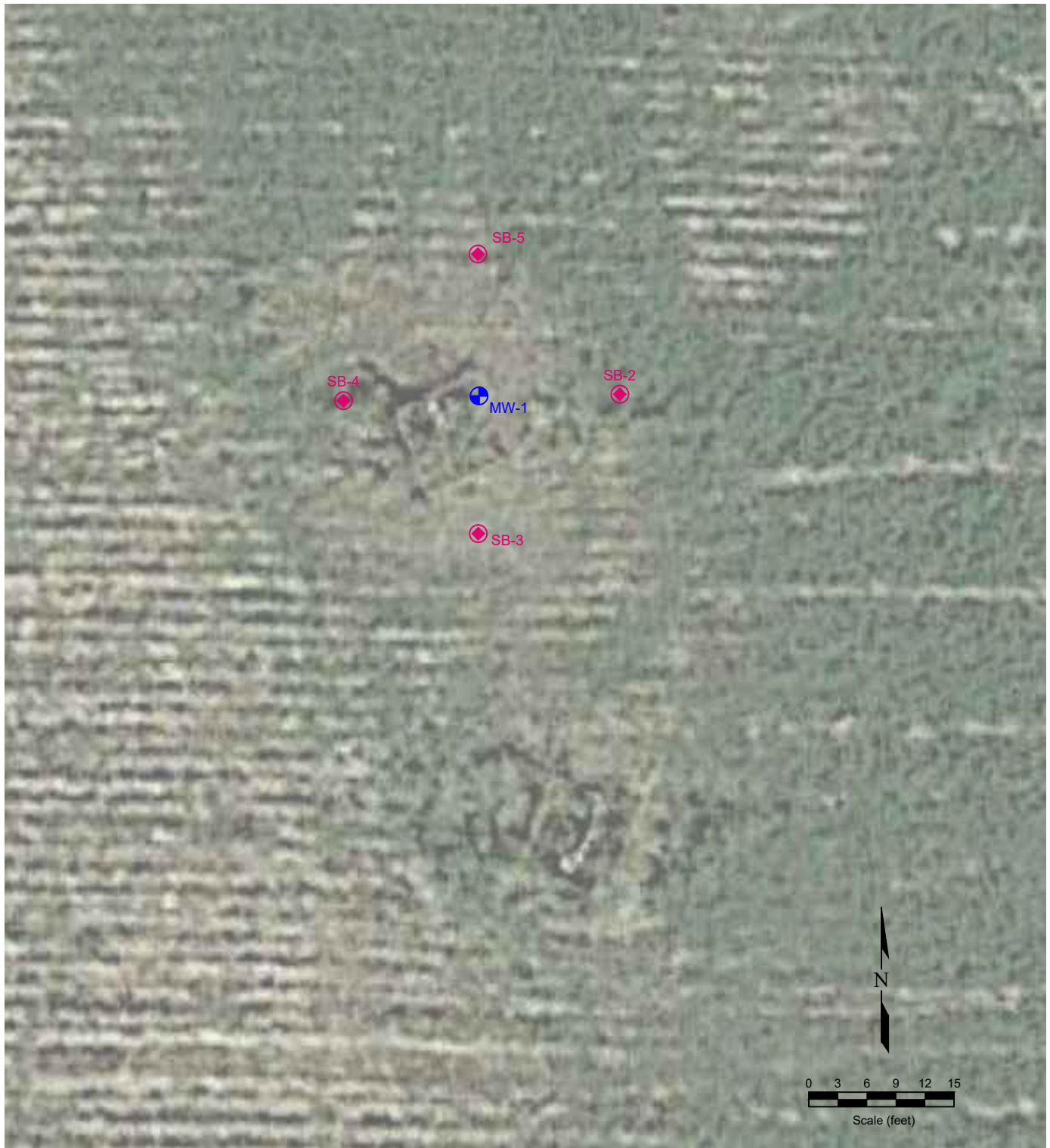
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Energy, Inc. ~ Howard A27-1
NENE Sec. 27, T6N, R64W, 6th PM
Weld County, Colorado
40.462728°, -104.529151°

Project # C022-040	API # 05-123-22848	Facility # 276882
Date 12/14/22	Remediation # 20374	Filename 22040T





LEGEND

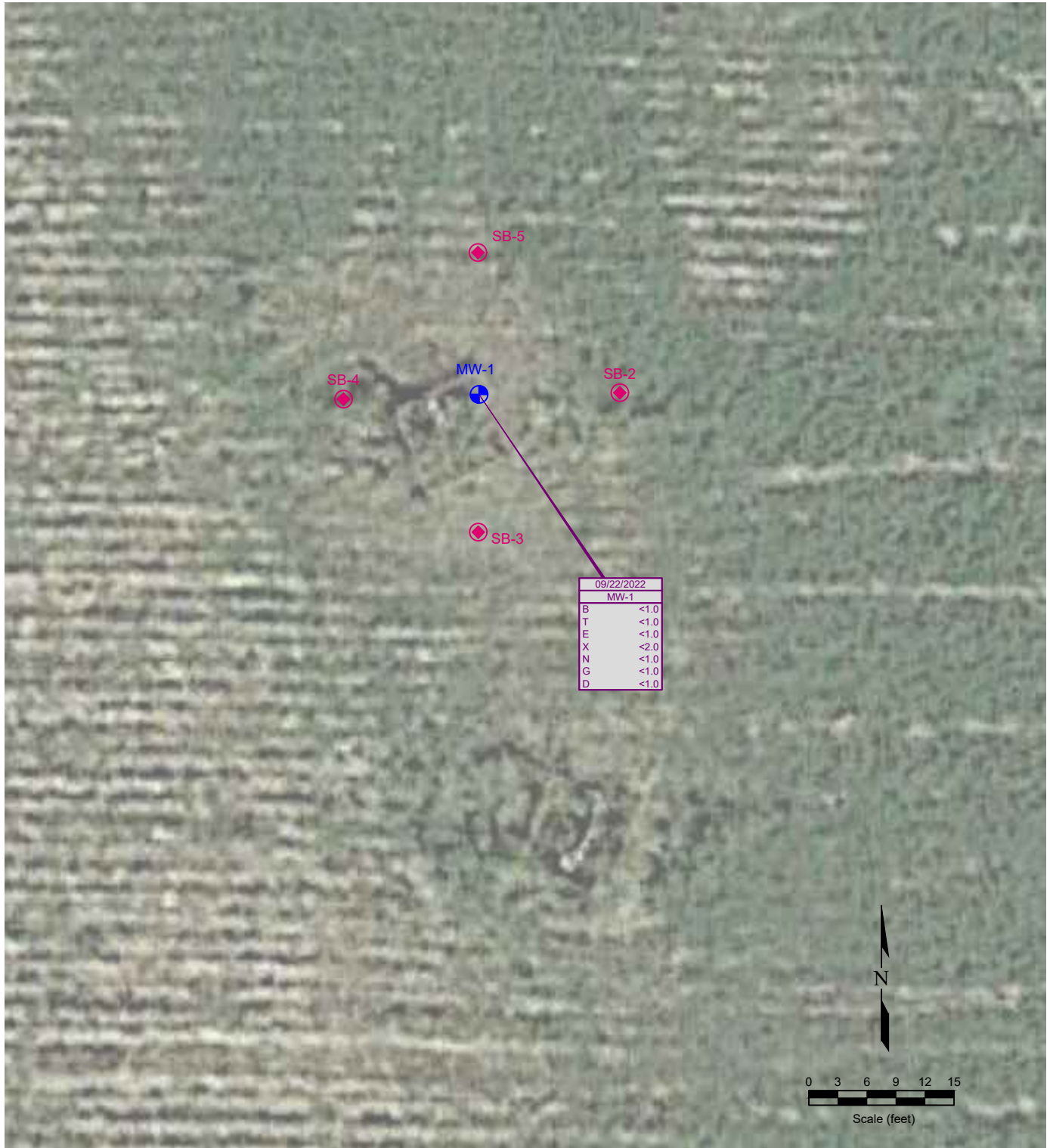
- ◆ SOIL BORING
- MONITORING WELL

**Figure 2
SITE MAP**

Noble Energy, Inc. ~ Howard A27-1
 NENE Sec. 27, T6N, R64W, 6th PM
 Weld County, Colorado
 40.462728°, -104.529151°

Project No. C022-040	API # 05-123-22848	Facility # 276882
Date 12/14/22	Remediation # 20374	Filename 22040QSC





LEGEND

- SOIL BORING
- MONITORING WELL

09/22/2022		DATE SAMPLED
MW-1		SAMPLE ID
B	<1.0	BENZENE (ug/L)
T	<1.0	TOLUENE (ug/L)
E	<1.0	ETHYLBENZENE (ug/L)
X	<2.0	TOTAL XYLENES (ug/L)
N	<1.0	NAPHTHALENE (ug/L)
G	<1.0	1,2,4-TRIMETHYLBENZENE (ug/L)
D	<1.0	1,3,5-TRIMETHYLBENZENE (ug/L)

Figure 3
GROUNDWATER CHEMISTRY MAP

Noble Energy, Inc. ~ Howard A27-1
 NENE Sec. 27, T6N, R64W, 6th PM
 Weld County, Colorado
 40.462728°, -104.529151°

Project No. C022-040	API # 05-123-22848	Facility # 276882
Date 1/9/23	Remediation # 20374	Filename 22040QSC



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 29, 2022

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Howard A27-01 (H)

Work Order #2209460

Enclosed are the results of analyses for samples received by Summit Scientific on 09/22/22 16:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Howard A27-01 (H)

Project Number: [none]
Project Manager: Paul Henchan

Reported:
09/29/22 16:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW1	2209460-01	Water	09/22/22 00:00	09/22/22 16:50

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

S₂

2209460

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: Fremont Env

Project Manager: Paul Henehan

Address:

E-Mail: Paulh@fremontenv.com Ethanb@fremontenv.com

City/State/Zip:

jeffg@fremontenv.com

Phone:

Project Name: Howard A27-1 (H)

Sampler Name: JG

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions				
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBS(915)	TD, C, Sulfide										
1	MW1	09/22/22		4	X					X					X	X	X								
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									

Relinquished by: <u>[Signature]</u>	Date/Time: <u>09/22/22 1650</u>	Received by: <u>[Signature]</u>	Date/Time: <u>9.22.22 1650</u>	Turn Around Time (Check)	Same Day <u> </u> 72 hours <u> </u> 24 hours <u> </u> Standard <u>X</u> 48 hours <u> </u> Sample Integrity: <u>Yes</u> No Samples Intact: <u>Yes</u> No	Notes: <u>Bill to Noble</u>
Relinquished by:	Date/Time:	Received by:	Date/Time:			
Temperature Upon Receipt: <u>14.6</u>	Corrected Temperature <u> </u>	HNO3 lot # <u> </u>				
IR gun correction: <u> </u>		IR gun #: <u> </u>				

S₂

2209460

Sample Receipt Checklist

S2 Work Order#

Client: Fremont Client Project ID: Howard A27-1 (H)Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☒ Other ☐Temp (°C) 14.6 Thermometer # ☐

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

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

9.22.22
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Howard A27-01 (H)

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/29/22 16:39

MW1
2209460-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/22/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BF10676	09/26/22	09/27/22	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: **09/22/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		90.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.5 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **09/22/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	13.8	12.0	mg/L	200	BF10675	09/26/22	09/27/22	EPA 300.0	
Sulfate	351	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **09/22/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	600	10.0	mg/L	1	BF10681	09/26/22	09/27/22	SM2540C	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Howard A27-01 (H)

Project Number: [none]
Project Manager: Paul Henchan

Reported:
09/29/22 16:39

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 BFI0676 - EPA 5030 Water MS

Blank (BFI0676-BLK1)

Prepared: 09/26/22 Analyzed: 09/27/22

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	14.0		"	13.3		105	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.8	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	21-167			

LCS (BFI0676-BS1)

Prepared: 09/26/22 Analyzed: 09/27/22

Benzene	51.5	1.0	ug/l	50.0		103	51-132			
Toluene	50.9	1.0	"	50.0		102	51-138			
Ethylbenzene	54.2	1.0	"	50.0		108	58-146			
m,p-Xylene	111	2.0	"	100		111	57-144			
o-Xylene	52.4	1.0	"	50.0		105	53-146			
Naphthalene	57.1	1.0	"	50.0		114	70-130			
1,2,4-Trimethylbenzene	56.9	1.0	"	50.0		114	70-130			
1,3,5-Trimethylbenzene	56.6	1.0	"	50.0		113	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.3		102	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.6	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.8	21-167			

Matrix Spike (BFI0676-MS1)

Source: 2209428-01

Prepared: 09/26/22 Analyzed: 09/27/22

Benzene	56.3	1.0	ug/l	50.0	ND	113	34-141			
Toluene	56.9	1.0	"	50.0	ND	114	27-151			
Ethylbenzene	62.7	1.0	"	50.0	ND	125	29-160			
m,p-Xylene	126	2.0	"	100	ND	126	20-166			
o-Xylene	58.7	1.0	"	50.0	ND	117	33-159			
Naphthalene	62.5	1.0	"	50.0	ND	125	70-130			
1,2,4-Trimethylbenzene	64.2	1.0	"	50.0	ND	128	70-130			
1,3,5-Trimethylbenzene	64.5	1.0	"	50.0	ND	129	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.6		"	13.3		94.7	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.6	21-167			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Howard A27-01 (H)

Project Number: [none]
Project Manager: Paul Henchan

Reported:
09/29/22 16:39

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 BFI0676 - EPA 5030 Water MS

Matrix Spike Dup (BFI0676-MSD1)

Source: 2209428-01

Prepared: 09/26/22 Analyzed: 09/27/22

Benzene	54.1	1.0	ug/l	50.0	ND	108	34-141	3.95	30	
Toluene	54.8	1.0	"	50.0	ND	110	27-151	3.76	30	
Ethylbenzene	59.8	1.0	"	50.0	ND	120	29-160	4.72	30	
m,p-Xylene	121	2.0	"	100	ND	121	20-166	4.26	30	
o-Xylene	57.1	1.0	"	50.0	ND	114	33-159	2.73	30	
Naphthalene	61.0	1.0	"	50.0	ND	122	70-130	2.45	30	
1,2,4-Trimethylbenzene	63.8	1.0	"	50.0	ND	128	70-130	0.656	30	
1,3,5-Trimethylbenzene	63.9	1.0	"	50.0	ND	128	70-130	0.919	30	
Surrogate: 1,2-Dichloroethane-d4	12.3		"	13.3		92.5	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.6	20-170			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.5	21-167			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Howard A27-01 (H)

Project Number: [none]
Project Manager: Paul Henchan

Reported:
09/29/22 16:39

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 BFI0675 - General Preparation

Blank (BFI0675-BLK1)

Prepared: 09/26/22 Analyzed: 09/27/22

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BFI0675-BS1)

Prepared: 09/26/22 Analyzed: 09/27/22

Chloride	2.94	0.0600	mg/L	3.00	97.9	90-110
Sulfate	16.2	0.300	"	15.0	108	90-110

Duplicate (BFI0675-DUP1)

Source: 2209450-01

Prepared: 09/26/22 Analyzed: 09/27/22

Chloride	971	12.0	mg/L	982	1.09	20
Sulfate	13600	60.0	"	13700	0.992	20

Matrix Spike (BFI0675-MS1)

Source: 2209450-01

Prepared: 09/26/22 Analyzed: 09/27/22

Chloride	1490	12.0	mg/L	600	982	85.4	80-120
Sulfate	15200	60.0	"	3000	13700	50.3	80-120

QM-02

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.



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Howard A27-01 (H)

Project Number: [none]
Project Manager: Paul Henchan

Reported:
09/29/22 16:39

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BFI0681 - General Preparation

Blank (BFI0681-BLK1)

Prepared: 09/26/22 Analyzed: 09/27/22

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BFI0681-DUP1)

Source: 2209441-01

Prepared: 09/26/22 Analyzed: 09/27/22

Total Dissolved Solids 1430 10.0 mg/L 1400 2.05 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Howard A27-01 (H)

Project Number: [none]
Project Manager: Paul Henchan

Reported:
09/29/22 16:39

Notes and Definitions

QM-02	The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
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