

FREMONT ENVIRONMENTAL INC.

March 1, 2022

Mr. Jacob Evans
Noble Energy Inc.
2115 117th Avenue
Greeley, CO 80634

Subject: **Groundwater Data Submittal**
Harper Kona Pipeline
NESW Sec 21, T6N, R64W
Weld County, Colorado
Fremont Project No. C021-074
Spill #480529

Dear Mr. Evans:

Enclosed please find a copy of the above referenced Groundwater Data Submittal for the Harper Kona Pipeline 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. Henehan, P.E.
Senior Consultant

Enclosure

TABLE 1
SUMMARY OF ORGANIC GROUNDWATER CHEMISTRY DATA
NOBLE MIDSTREAM - HARPER KONA PIPELINE
FREMONT PROJECT NO. C021-074

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	NAPH- THALENE (µg/L)	1,2,4 TMB (µg/L)	1,3,5 TMB (µg/L)	TOC ELEV (FT)	DTW (FT)	GW ELEV (FT)	LNAPL (FT)
MW-1	11/04/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	92.97	9.43	83.54	NP
	01/20/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		11.66	81.31	NP
MW-2	11/04/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	94.83	10.85	83.98	NP
	01/20/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		12.54	82.29	NP
MW-3	11/04/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	94.90	11.09	83.81	NP
	01/20/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		12.87	82.03	NP
MW-4	11/04/21	Dry	Dry	Dry	Dry	Dry	Dry	Dry	98.26	Dry	Dry	Dry
	01/20/22	Dry	Dry	Dry	Dry	Dry	Dry	Dry		Dry	Dry	Dry
MW-5	11/04/21	Dry	Dry	Dry	Dry	Dry	Dry	Dry	98.39	Dry	Dry	Dry
	01/20/22	Dry	Dry	Dry	Dry	Dry	Dry	Dry		Dry	Dry	Dry
MW-6	11/04/21	Dry	Dry	Dry	Dry	Dry	Dry	Dry	98.38	13.78	84.60	NP
	01/20/22	Dry	Dry	Dry	Dry	Dry	Dry	Dry		Dry	Dry	Dry
MW-7	11/04/21	Dry	Dry	Dry	Dry	Dry	Dry	Dry	100.00	Dry	Dry	Dry
	01/20/22	Dry	Dry	Dry	Dry	Dry	Dry	Dry		Dry	Dry	Dry
MW-8	11/04/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	95.00	11.04	83.96	NP
	01/20/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		12.42	82.58	NP
MW-9	11/04/21	Dry	Dry	Dry	Dry	Dry	Dry	Dry	97.91	Dry	Dry	Dry
	01/20/22	Dry	Dry	Dry	Dry	Dry	Dry	Dry		Dry	Dry	Dry
MW-10	11/04/21	Dry	Dry	Dry	Dry	Dry	Dry	Dry	98.66	Dry	Dry	Dry
	01/20/22	Dry	Dry	Dry	Dry	Dry	Dry	Dry		Dry	Dry	Dry
Table 915-1 Limits		5	560	700	1,400	140	67	67				

Bold face values exceed the COGCC limits

NP - No Free Product

TABLE 2
SUMMARY OF INORGANIC GROUNDWATER CHEMISTRY DATA
NOBLE MIDSTREAM - HARPER KONA PIPELINE
FREMONT PROJECT NO. C021-074

SAMPLE LOCATION	DATE	TDS (mg/L)	CHLORIDE ION (mg/L)	SULFATE ION (mg/L)	BARIUM (mg/L)
MW-1	11/04/21	1080	55.2	899	NA
	01/20/22	1360	35.4	499	0.0774
MW-2	11/04/21	2550	187	2360	NA
	01/20/22	3670	392	1360	0.116
MW-3	11/04/21	2420	46.6	2360	NA
	01/20/22	IW	IW	IW	IW
MW-4	11/04/21	Dry	Dry	Dry	Dry
	01/20/22	Dry	Dry	Dry	Dry
MW-5	11/04/21	Dry	Dry	Dry	Dry
	01/20/22	Dry	Dry	Dry	Dry
MW-6	11/04/21	Dry	Dry	Dry	Dry
	01/20/22	Dry	Dry	Dry	Dry
MW-7	11/04/21	Dry	Dry	Dry	Dry
	01/20/22	Dry	Dry	Dry	Dry
MW-8	11/04/21	2820	106	2620	NA
	01/20/22	2720	63.6	1580	0.0819
MW-9	11/04/21	Dry	Dry	Dry	Dry
	01/20/22	Dry	Dry	Dry	Dry

SAMPLE LOCATION	DATE	TDS (mg/L)	CHLORIDE ION (mg/L)	SULFATE ION (mg/L)	BARIUM (mg/L)
MW-10	11/04/21 01/20/22	Dry Dry	Dry Dry	Dry Dry	Dry Dry
Table 915-1 Limits		<1.25 x local background	250 or 1.25x background	250 or 1.25x background	None
Reg. 41 Drinking Water Standard					2.0

Bold face values exceed the COGCC limits

NA - Not Analyzed

NAP - Not Applicable

IW - Insufficient Water

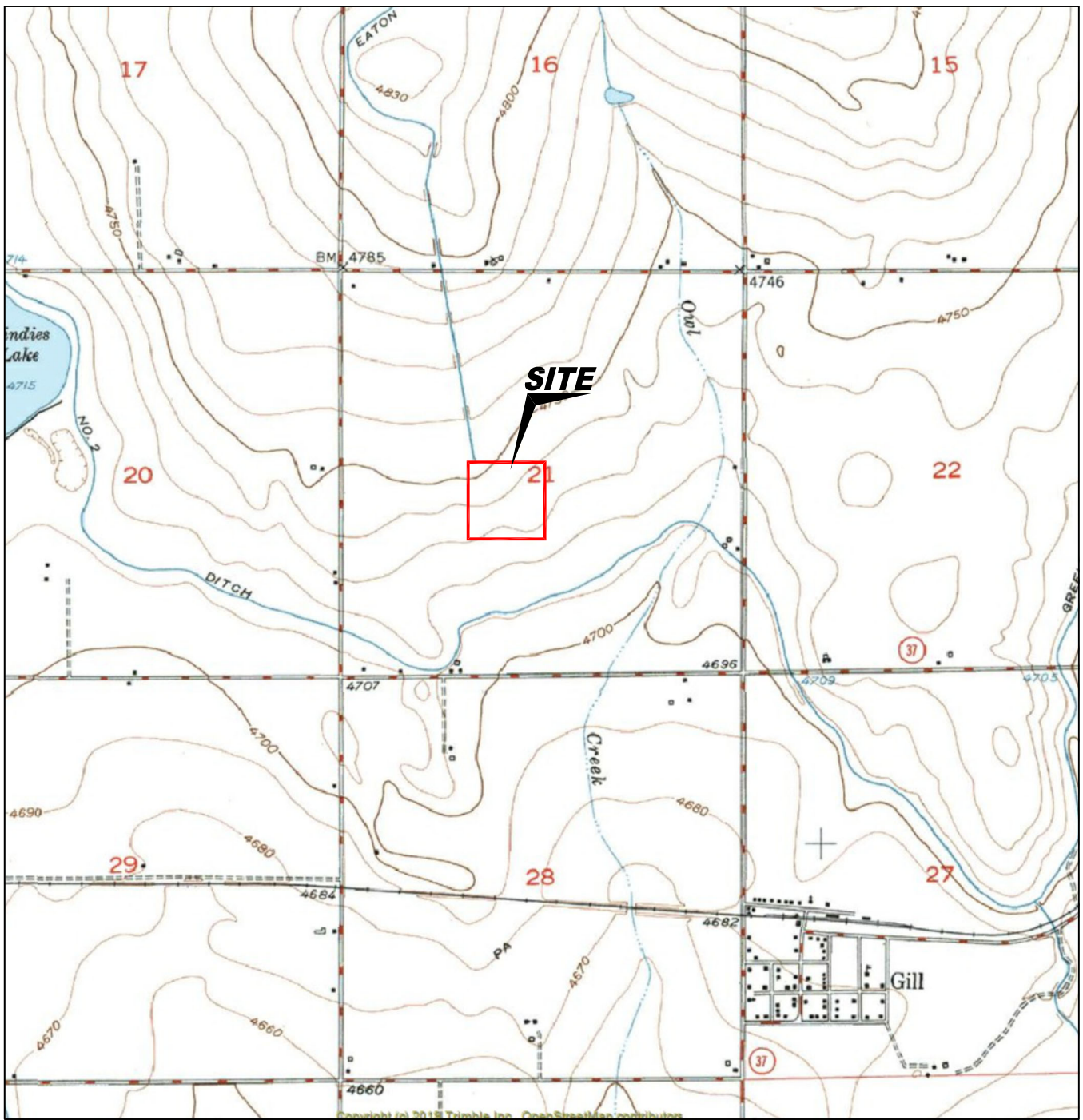
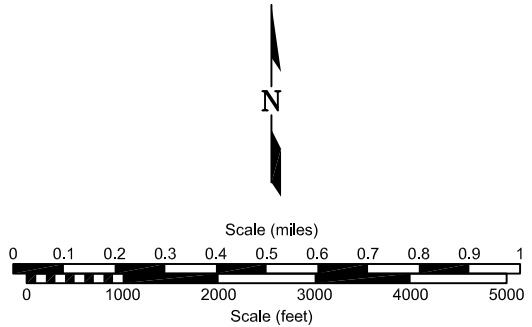
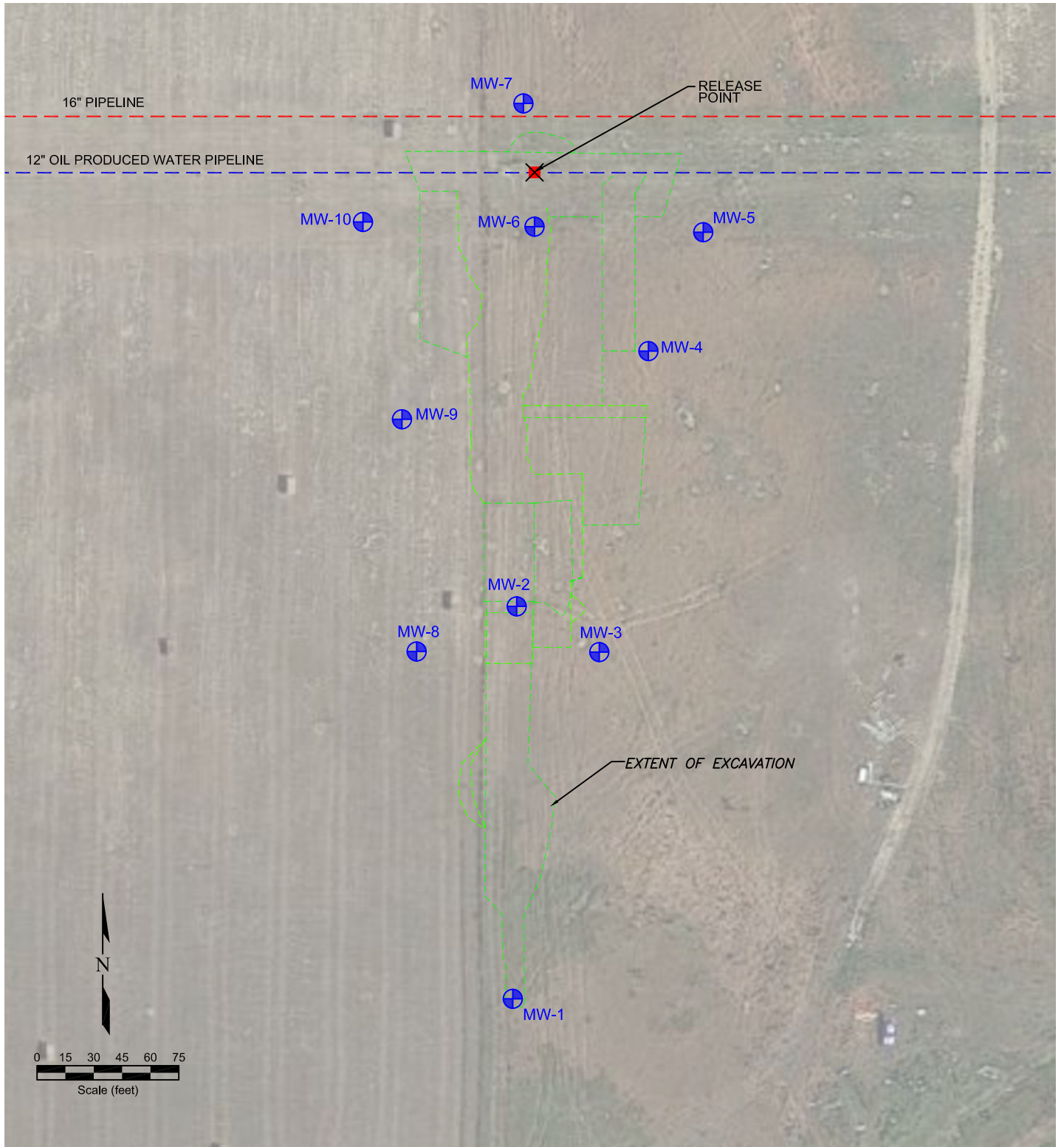


Figure 1
SITE LOCATION MAP







Noble Midstream, Inc.
Harper Pipeline Release
 NESW Sec. 21, T6N, R64W, 6th PM
 Weld County, Colorado



Project # C021-074	Prepared By TA	Drawn By TA	
Date 2/23/22	Reviewed By EB	Filename 21074T	



LEGEND

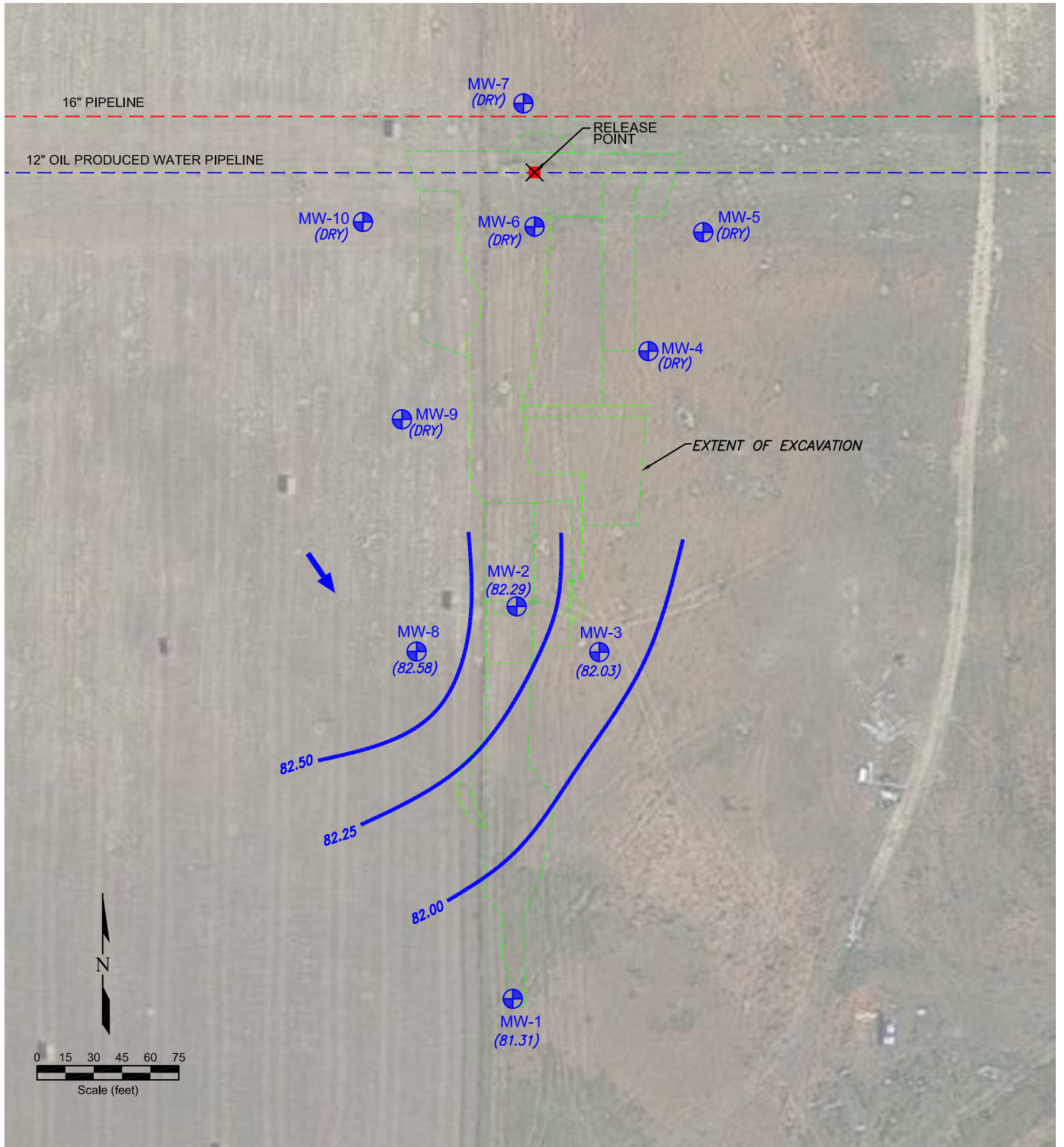
-  RELEASE POINT
-  MONITORING WELL LOCATION
-  EXTENT OF EXCAVATION
-  12" OIL PRODUCED WATER PIPELINE
-  16" PIPELINE
-  FENCE LINE

**Figure 2
SITE MAP**

Noble Midstream, Inc.
 Harper Pipeline Release
 NESW Sec. 21, T6N, R64W, 6th PM
 Weld County, Colorado

Project No. CO21-074	Prepared by	Drawn by TA
Date 2/23/22	Reviewed by EB	Filename 21074QL





LEGEND



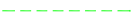







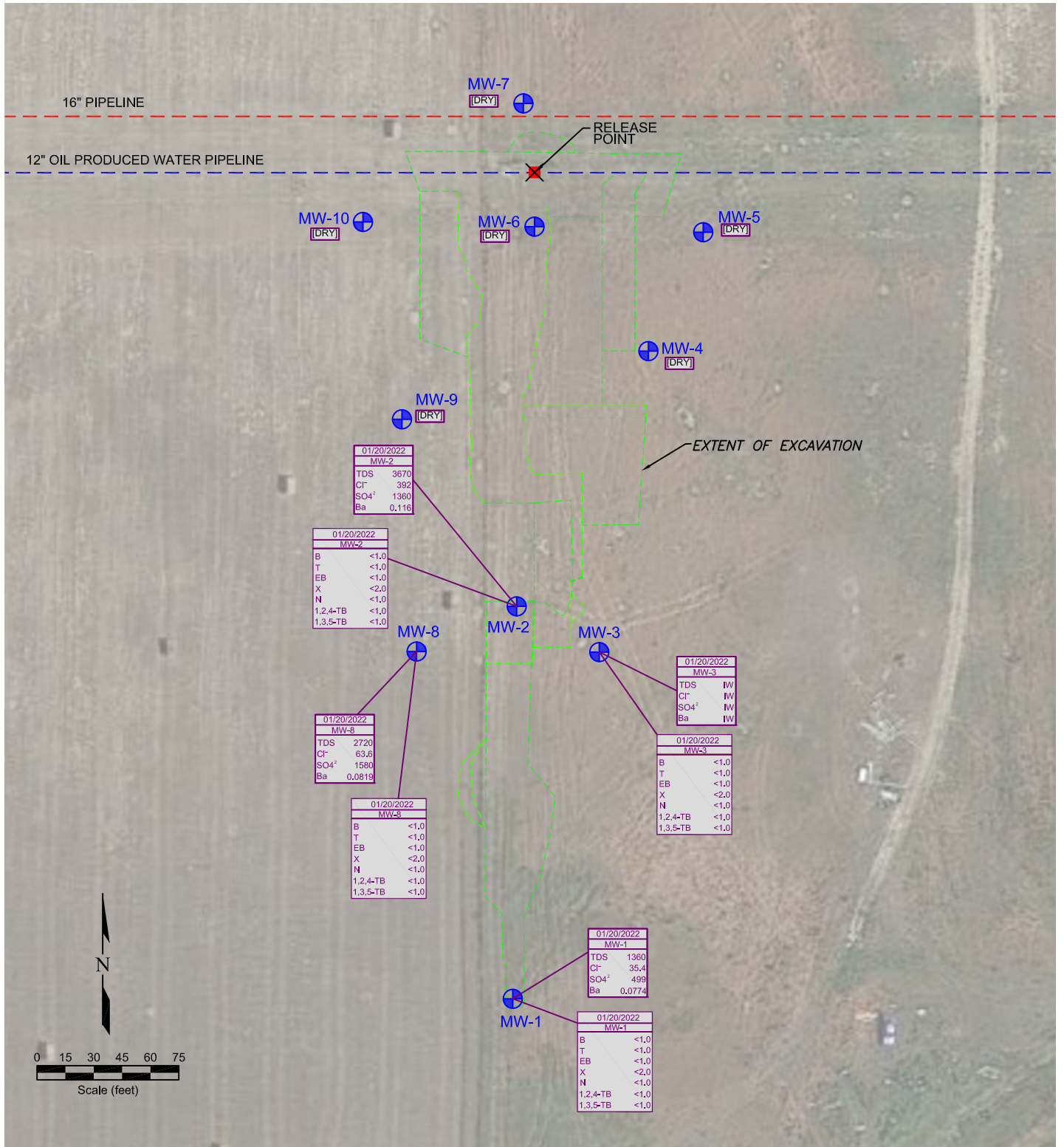
-  RELEASE POINT
-  MONITORING WELL LOCATION
-  EXTENT OF EXCAVATION
-  12" OIL PRODUCED WATER PIPELINE
-  16" PIPELINE
-  FENCE LINE
-  (84.60) GROUND WATER ELEVATION (ft above arbitrary datum)
-  WATER TABLE CONTOUR
-  GROUND WATER FLOW DIRECTION
-  DRY WATER SUPPLY NOT PRESENT

Figure 3
INFERRED GROUNDWATER CONTOUR MAP
 January 20, 2022

Noble Midstream, Inc.
 Harper Pipeline Release
 NESW Sec. 21, T6N, R64W, 6th PM
 Weld County, Colorado

Project No. CO21-074	Prepared by	Drawn by TA
Date 2/25/22	Reviewed by EB	Filename 21074QL





LEGEND

	RELEASE POINT		MONITORING WELL LOCATION		WATER SUPPLY NOT PRESENT
	EXTENT OF EXCAVATION		MONITORING WELL LOCATION		INSUFFICIENT WATER SUPPLY
	12" OIL PRODUCED WATER PIPELINE				
	16" PIPELINE				
	FENCE LINE				

	DATE SAMPLED		DATE SAMPLED
	SAMPLE ID		SAMPLE ID
	TOTAL DISSOLVED SOLIDS (mg/L)		BENZENE (ug/L)
	CHLORIDE ION (mg/L)		TOLUENE (ug/L)
	SULFATE ION (mg/L)		ETHYLBENZENE (ug/L)
	BARIUM (mg/L)		TOTAL XYLENES (ug/L)
			NAPHTHALENE (ug/L)
			1,2,4-TRIMETHYLBENZENE (ug/L)
			1,3,5-TRIMETHYLBENZENE (ug/L)

Figure 4
GROUNDWATER CHEMISTRY MAP
January 20, 2022

Noble Midstream, Inc.
 Harper Pipeline Release
 NESW Sec. 21, T6N, R64W, 6th PM
 Weld County, Colorado

Project No. CO21-074	Prepared by EB	Drawn by TA	
Date 2/25/22	Reviewed by EB	Filename 21074QL	

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

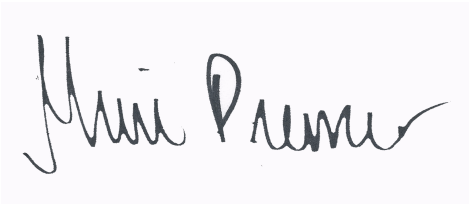
February 23, 2022

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble Midstream - Harper Kona Pipeline
Work Order #2201235

Enclosed are the results of analyses for samples received by Summit Scientific on 01/20/22 17:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large, stylized 'M' and 'P'.

Muri Premer For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/23/22 11:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	2201235-01	Water	01/20/22 00:00	01/20/22 17:35
MW-2	2201235-02	Water	01/20/22 00:00	01/20/22 17:35
MW-3	2201235-03	Water	01/20/22 00:00	01/20/22 17:35
MW-8	2201235-04	Water	01/20/22 00:00	01/20/22 17:35

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

2201235

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: Fremont Environmental

Project Manager: Paul Henehan

Address: P.O Box 1289

E-Mail: paulh@fremontenv.com, ethanb@fremontenv.com

City/State/Zip: Wellington, CO 80549

Bill to: Jacob

Phone: 303-956-8714

Project Name: Noble Midstream - Harper Kona Pipeline

Sampler Name: Black

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	MBTEXN - 915	MBTEXN - 915	Dissolved Barium	DRO/ORO	TDS, Cl ⁻ , SO ₄ ²⁻	EC		pH	Boron
1	MW-1	1/20/22		4			X		X				X	X	X	X					
2	MW-2			4																	
3	MW-3			3																	
4	MW-8			4																	Partially Filled Jars
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: <u>Ethan Black</u>	Date/Time: <u>1/20/22</u>	Received by: <u>[Signature]</u>	Date/Time: <u>1/20/22 17:35</u>	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>4.7</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes: <u>[Signature]</u> Partially Filled Jars
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

S2 Work Order# 2201235

Sample Receipt Checklist

Client: Fremont Client Project ID: Noble Midstream Harper Kona Pipeline

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

Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)Temp (°C) 4.7

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°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"/>	
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"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<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"/>	
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"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽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, H2SO4, NaOH, HNO3, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.CS
Custodian Printed Name or Initials1/20/22
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/23/22 11:51

MW-1
2201235-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFA0392	01/24/22	01/27/22	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: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		70.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		89.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.3 %		21-167		"	"	"	"	

Dissolved Metals by EPA Method 200.8

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Barium	77.4	0.200		ug/l	1	BFA0375	01/24/22	02/23/22	EPA 200.8	

Anions by EPA Method 300.0

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	35.4	12.0		mg/L	200	BFA0427	01/26/22	01/26/22	EPA 300.0	
Sulfate	499	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Summit Scientific

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



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/23/22 11:51

MW-1
2201235-01 (Water)

Summit Scientific

Total Dissolved Solids by SM2540C

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1360	10.0		mg/L	1	BFA0389	01/24/22	01/25/22	SM2540C	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/23/22 11:51

MW-2
2201235-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFA0392	01/24/22	01/27/22	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: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		69.9 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		90.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.2 %		21-167		"	"	"	"	

Dissolved Metals by EPA Method 200.8

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Barium	116	0.200		ug/l	1	BFA0375	01/24/22	02/23/22	EPA 200.8	

Anions by EPA Method 300.0

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	392	12.0		mg/L	200	BFA0427	01/26/22	01/26/22	EPA 300.0	
Sulfate	1360	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/23/22 11:51

MW-2
2201235-02 (Water)

Summit Scientific

Total Dissolved Solids by SM2540C

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	3670	10.0		mg/L	1	BFA0389	01/24/22	01/25/22	SM2540C	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/23/22 11:51

MW-3
2201235-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFA0392	01/24/22	01/27/22	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: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		68.1 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		91.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.7 %		21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/23/22 11:51

MW-8
2201235-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFA0392	01/24/22	01/27/22	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: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		65.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		89.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %		21-167		"	"	"	"	

Dissolved Metals by EPA Method 200.8

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Barium	81.9	0.200		ug/l	1	BFA0375	01/24/22	02/23/22	EPA 200.8	

Anions by EPA Method 300.0

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	63.6	12.0		mg/L	200	BFA0427	01/26/22	01/26/22	EPA 300.0	
Sulfate	1580	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/23/22 11:51

MW-8
2201235-04 (Water)

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Total Dissolved Solids by SM2540C

Date Sampled: **01/20/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2720	10.0		mg/L	1	BFA0389	01/24/22	01/25/22	SM2540C	

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PO Box 1289
Wellington CO, 80549

Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/23/22 11:51

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BFA0392 - EPA 5030 Water MS

Blank (BFA0392-BLK1)

Prepared: 01/24/22 Analyzed: 01/25/22

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	15.7		"	13.3		118	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		92.9	21-167			

LCS (BFA0392-BS1)

Prepared: 01/24/22 Analyzed: 01/25/22

Benzene	40.1	1.0	ug/l	33.3		120	51-132			
Toluene	38.9	1.0	"	33.3		117	51-138			
Ethylbenzene	40.2	1.0	"	33.3		121	58-146			
m,p-Xylene	78.2	2.0	"	66.7		117	57-144			
o-Xylene	39.2	1.0	"	33.3		118	53-146			
Naphthalene	37.2	1.0	"	33.3		112	70-130			
1,2,4-Trimethylbenzene	33.4	1.0	"	33.3		100	70-130			
1,3,5-Trimethylbenzene	43.1	1.0	"	33.3		129	70-130			
Surrogate: 1,2-Dichloroethane-d4	16.3		"	13.3		123	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.2	21-167			

Matrix Spike (BFA0392-MS1)

Source: 2201210-01

Prepared: 01/24/22 Analyzed: 01/25/22

Benzene	40.1	1.0	ug/l	33.3	ND	120	34-141			
Toluene	39.2	1.0	"	33.3	ND	118	27-151			
Ethylbenzene	40.0	1.0	"	33.3	ND	120	29-160			
m,p-Xylene	79.4	2.0	"	66.7	ND	119	20-166			
o-Xylene	39.6	1.0	"	33.3	ND	119	33-159			
Naphthalene	40.0	1.0	"	33.3	ND	120	70-130			
1,2,4-Trimethylbenzene	33.4	1.0	"	33.3	ND	100	70-130			
1,3,5-Trimethylbenzene	43.0	1.0	"	33.3	ND	129	70-130			
Surrogate: 1,2-Dichloroethane-d4	16.6		"	13.3		124	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	21-167			

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Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/23/22 11:51

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 BFA0392 - EPA 5030 Water MS

Matrix Spike Dup (BFA0392-MSD1)	Source: 2201210-01			Prepared: 01/24/22 Analyzed: 01/25/22						
Benzene	40.5	1.0	ug/l	33.3	ND	121	34-141	0.994	30	
Toluene	39.0	1.0	"	33.3	ND	117	27-151	0.511	30	
Ethylbenzene	39.3	1.0	"	33.3	ND	118	29-160	1.69	30	
m,p-Xylene	77.3	2.0	"	66.7	ND	116	20-166	2.76	30	
o-Xylene	39.1	1.0	"	33.3	ND	117	33-159	1.12	30	
Naphthalene	43.2	1.0	"	33.3	ND	130	70-130	7.73	30	
1,2,4-Trimethylbenzene	33.1	1.0	"	33.3	ND	99.3	70-130	0.812	30	
1,3,5-Trimethylbenzene	42.7	1.0	"	33.3	ND	128	70-130	0.676	30	
Surrogate: 1,2-Dichloroethane-d4	17.5		"	13.3		131	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.9	21-167			

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Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/23/22 11:51

Dissolved Metals by EPA Method 200.8 - Quality Control
Summit Scientific

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

Batch BFA0375 - EPA 200.8

Blank (BFA0375-BLK1)

Prepared: 01/24/22 Analyzed: 02/23/22

Barium ND 0.200 ug/l

LCS (BFA0375-BS1)

Prepared: 01/24/22 Analyzed: 02/23/22

Barium 539 0.200 ug/l 500 108 85-115

Duplicate (BFA0375-DUP1)

Source: 2201193-02

Prepared: 01/24/22 Analyzed: 02/23/22

Barium 26.9 0.200 ug/l 29.1 7.86 20

Matrix Spike (BFA0375-MS1)

Source: 2201193-02

Prepared: 01/24/22 Analyzed: 02/23/22

Barium 489 0.200 ug/l 500 29.1 92.0 70-130

Matrix Spike Dup (BFA0375-MSD1)

Source: 2201193-02

Prepared: 01/24/22 Analyzed: 02/23/22

Barium 493 0.200 ug/l 500 29.1 92.8 70-130 0.815 25

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Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/23/22 11:51

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BFA0427 - General Preparation

Blank (BFA0427-BLK1)

Prepared & Analyzed: 01/26/22

Chloride	ND	0.0600	mg/L							
Sulfate	ND	0.300	"							

LCS (BFA0427-BS1)

Prepared & Analyzed: 01/26/22

Chloride	2.98	0.0600	mg/L	3.00	99.4	90-110				
Sulfate	15.7	0.300	"	15.0	105	90-110				

Duplicate (BFA0427-DUP1)

Source: 2201233-01

Prepared: 01/26/22 Analyzed: 01/27/22

Chloride	8.56	0.0600	mg/L		10.8			23.4	20	QR-03
Sulfate	23.2	0.300	"		23.2			0.177	20	

Matrix Spike (BFA0427-MS1)

Source: 2201233-01

Prepared: 01/26/22 Analyzed: 01/27/22

Chloride	11.1	0.0600	mg/L	600	10.8	0.0440	80-120			QM-05
Sulfate	32.3	0.300	"	3000	23.2	0.301	80-120			QM-05

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Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/23/22 11:51

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BFA0389 - General Preparation

Blank (BFA0389-BLK1)

Prepared: 01/24/22 Analyzed: 01/25/22

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BFA0389-DUP1)

Source: 2201233-01

Prepared: 01/24/22 Analyzed: 01/25/22

Total Dissolved Solids 549 10.0 mg/L 556 1.32 20

Summit Scientific

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Project: Noble Midstream - Harper Kona Pipeline

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/23/22 11:51

Notes and Definitions

- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference