

# **FREMONT ENVIRONMENTAL INC.**

February 2, 2024

Mr. Daniel Peterson  
Noble Energy Inc.  
2115 117<sup>th</sup> Avenue  
Greeley, CO 80634

Subject:           **Facility Closure Data Submittal**  
Knaub 64N64W 9SWSW  
SWSW Sec. 9, T4N, R65W  
Weld County, Colorado  
Fremont Project No. C024-021  
Facility # 328257, Remediation # 30788

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted facility closure activities for the Noble Energy Inc. (Noble) Knaub 64N64W 9SWSW. Impacted soil was encountered at the former separator dumpline area during abandonment activities. Details of the Knaub 64N64W 9SWSW facility closure activities are documented in the attached Closure Report. Groundwater was not encountered during flowline abandonment activities.

Please contact me at (303) 261-6246 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

**FREMONT ENVIRONMENTAL INC.**



Stanley Gilbert  
Environmental Scientist

Attachments:

- Facility Closure Checklist
- Tables
- Figures
- Photos
- Laboratory Report

## Tank Battery Closure Checklist

### COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):		Pit Closure		Wellhead Closure		Flowline Closure	<b>X</b>	Partially Buried Vault Closure
Site Name & COGCC Facility Number: KNAUB-64N65W 9SWSW Facility #:328257		Date: 01/29/2024		Remediation Project #: 30788				
Associated Wells: Knaub 09-13G API:05-123-15767		Age of Site: 2007		Number of Photos Attached: 9				
Location: (GPS coordinates of southeaster berm) 40.320238, -104.673833						Estimated Facility Size (acres): ~1 Acre		

*General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)*  
**Good housekeeping. General condition for all the on-site equipment looked fine. Waste management well maintained.**

USCS Soil Type: SP	Estimated Depth to Groundwater: >3'
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*Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)*  
**Impacted soils encountered at former separator extends to an unknown depth**

*Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)*  
**None observed**

#### Tanks

Tank Contents	OIL							
Size (barrels)	300							
Age	2007							
Construction Material	Steel							
Tank type (AST/DRV, etc.)	AST							
Visual Integrity of Tank	Good							
Condition of tank footings	Good							
PID Readings	High PID 33.2ppm							
Soil impacts present at valves or hatches?	No							
PID Readings	See attached							
Sample taken? Location/ Sample ID#	Yes, see attached							
Photo Number(s)	See attached							

*Other observations regarding tanks:*

#### Separators

Separator size	Unknown							
Vertical or Horizontal	Horizontal							
Age	2007							
Soil impacts observed? If yes,	Yes, at Dumpline							
PID Readings	High PID 2,510ppm							
Sample taken? Location/ Sample ID#	Yes, see attached							
Photo Number(s)	See attached							

*Other observations regarding separators*  
**Encountered contaminated soil in the former dumpline location (SEP DL 3')**

#### Third Party Equipment

Type	Meter house							
Age	2008							

Third Party	Unknown								
Removal Date	Still present								
Sample taken?	Yes, see attached								
PID Readings	High PID 0.0ppm								
Photo Number(s)	See attached								

### Other Facility Equipment

Equipment type	Flare				
Equipment Condition	Good				
Age	2007				
Soil impacts	N/A				
PID Readings	High PID 0.0ppm				
Sample taken?	Yes, see attached				
Photo Number(s)	See attached				

Other observations regarding other facility or third party equipment:

### Summary

Was impacted soil identified? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes - less than 10 cubic yards <input type="checkbox"/> Yes - more than 10 cubic yards	
Total number of samples field screened: 2	Total number of samples collected: 5
Highest PID Reading: High PID 2,510ppm (SEP DL 3')	Total number of samples submitted to lab for analysis: 3
If more than 10 cubic yards of impacted soil were observed:	
Vertical extent: Unknown	Estimated spill volume: Unknown
Lateral extent: Unknown	Volume of soil removed: Unknown
Is additional investigation required? Yes	
Was groundwater encountered during the investigation? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - not impacted or in contact with impacted soils <input type="checkbox"/> Yes - groundwater impacted and/or in contact with impacted soils	
Measured depth to groundwater:	Was remedial groundwater removal conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No
Date Groundwater was encountered:	Commencement date of removal:
Sheen on groundwater? <input type="checkbox"/> Yes <input type="checkbox"/> No	Volume of groundwater removed prior to sampling:
Free product observed? <input type="checkbox"/> Yes <input type="checkbox"/> No	Volume of groundwater removed post sampling:
Total number of samples collected:	Total Volume of groundwater removed:
Total number of samples submitted to lab for analysis:	

## Buried or Partially Buried Vessel Closure Checklist

### COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):		Pit Closure		Wellhead Closure		Flowline Closure		Tank Battery Closure	
Site Name & COGCC Facility Number: KNAUB-64N65W 9SWSW Facility #:328257		Date: <b>01/29/2024</b>				Remediation Project #: <b>30788</b>			
Associated Wells: <small>Knaub 09-13G API:05-123-15767</small>		Age of Site: <b>2007</b>				Number of Photos Attached: <b>9</b>			
Location: (GPS coordinates of vault or southeastern tank berm for multiple)						<b>40.320238, -104.673833</b>		Estimated Facility Size (acres): <b>~1 Acre</b>	

**General Condition of Site:** (General observations regarding housekeeping, corrosion, waste management, etc.)  
**Good housekeeping. General condition for all the on-site equipment looked fine. Waste management well maintained.**

USCS Soil Type: **SP**      Estimated Depth to Groundwater: **>3'**

**Hydrocarbon Impacted Soils / Spills:** (Note estimated size and if impact appears to be surficial or extends to an unknown depth)  
**Impacted soils encountered at former separator extends to an unknown depth**

**Salt Crusted Soils or Impacted Vegetation:** (Note estimated size and if impact appears to be surficial or extends to an unknown depth)  
**None observed**

#### Buried or Partially Buried Vessels

Tank Contents	Produced water								
Size (barrels)	100								
Age	2007								
Construction Material	Steel								
Visual Integrity of Tank	Good								
Condition of tank	Good								
PID Readings	High PID 538.1ppm								
Condition of Jumps Lines	Good								
PID Readings	See attached								
Sample taken? Location/Sample ID#	Yes, see attached								
Photo Number(s)	See attached								

**Other observations regarding partially buried vessels:**  
 Impacted soils was encountered at base of former partially buried vessel

#### Summary

Was impacted soil identified?     No     Yes - less than 10 cubic yards     Yes - more than 10 cubic yards

Total number of samples field screened: **4**      Total number of samples collected: **5**

Highest PID Reading: **538.1ppm (PWV Floor 3')**      Total number of samples submitted to lab for analysis: **1**

**If more than 10 cubic yards of impacted soil were observed:**

Vertical extent: Unknown      Estimated spill volume: Unknown

Lateral extent: Unknown      Volume of soil removed: Unknown

Is additional investigation required?    **Yes, site investigation is needed to gauge an accurate extent**

Was groundwater encountered during the investigation?     No     Yes - not impacted or in contact with impacted soils     Yes - groundwater impacted and/or in contact with impacted soils

Measured depth to groundwater:      Was remedial groundwater removal conducted?     Yes     No

Date Groundwater was encountered:      Commencement date of removal:

Sheen on groundwater?     Yes     No      Volume of groundwater removed prior to sampling:

Free product observed?     Yes     No      Volume of groundwater removed post sampling:

Total number of samples collected:      Total Volume of groundwater removed:

Total number of samples submitted to lab for analysis:

**TABLE 1**  
**SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA**  
**NOBLE ENERGY INC.**  
**KNAUB 64N65W 9SWSW, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C024-021**

Sample ID	Sample Date	Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500**		
AST 3'	01/29/2024	3'	<0.0020	<0.0050	<0.0050	<0.010	0.0052	<0.0050	<0.0038	<0.50	<50	<50
PWV FLOOR 3'	01/29/2024	3'	<0.0020	<0.0050	<0.0050	0.012	<0.0050	0.0078	<0.0038	2.0	<50	<50
SEP DL 3'	01/29/2024	3'	<0.0020	<0.0050	<0.0050	1.5	<b>22</b>	<b>20</b>	<0.0038	<b>710</b>	<b>700</b>	<50

Bold faced values exceed the ECMC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

Green highlighted cells indicate soil removed via excavation

\* Indicates laboratory minimum detection limit in excess of SSL

\*\* Summation of GRO+DRO+ORO must be less than 500 mg/kg

NA - Not analyzed

TABLE 2  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE ENERGY INC.  
KNAUB 64N65W 9SWSW, WELD COUNTY, COLORADO  
FREMONT PROJECT NO. C024-021

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
AST 3'	01/29/2024	3'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
PWV FLOOR 3'	01/29/2024	3'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<b>0.0128</b>	<b>0.0334</b>
SEP DL 3'	01/29/2024	3'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0054	<0.00500	<0.00500	<0.00500	<b>0.951</b>	<b>1.71</b>

Bold faced values exceed the ECMC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

\* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed

Green highlighted cells indicate soil removed via excavation

**TABLE 3**  
**SUMMARY OF SOIL SUITABILITY FOR RECLAMATION**  
**NOBLE ENERGY INC.**  
**KNAUB 64N65W 9SWSW, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C024-021**

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
Max. Background Concentration (or Concentration Range)			-	-	-	-
AST 3'	01/29/2024	3'	6.67	0.112	0.361	<2.00
PWV FLOOR 3'	01/29/2024	3'	<b>8.81</b>	0.275	0.183	<2.00
SEP DL 3'	01/29/2024	3'	7.79	0.519	0.463	<2.00

Bold faced, yellow highlighted values exceed the ECMC Table 915-1 concentrations

Green highlighted cells indicate soil removed via excavation

Orange highlighted cells exceed of the maximum background concentration, or concentration range

Yellow highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

NA - Not analyzed

TABLE 4  
SUMMARY OF METALS IN SOIL CHEMISTRY DATA  
NOBLE ENERGY INC.  
KNAUB 64N65W 9SWSW, WELD COUNTY, COLORADO  
FREMONT PROJECT NO. C024-021

Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
125% Max. Background Concentration			-	-	-	-	-	-	-	-	-	-
AST 3'	01/29/2024	3'	<b>0.794</b>	69.3	<0.200	<0.30	2.20	5.38	3.10	<0.260	0.0287	9.32
PWV FLOOR 3'	01/29/2024	3'	<b>0.751</b>	55.7	<0.200	<0.30	2.45	5.85	1.65	<0.260	0.0436	10.4
SEP DL 3'	01/29/2024	3'	<b>0.654</b>	40.8	<0.200	<0.30	1.69	3.62	1.62	<0.260	<0.0200	7.11

Bold faced values exceed the ECMC Table 915-1 concentrations

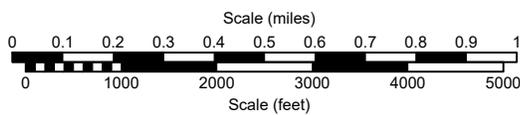
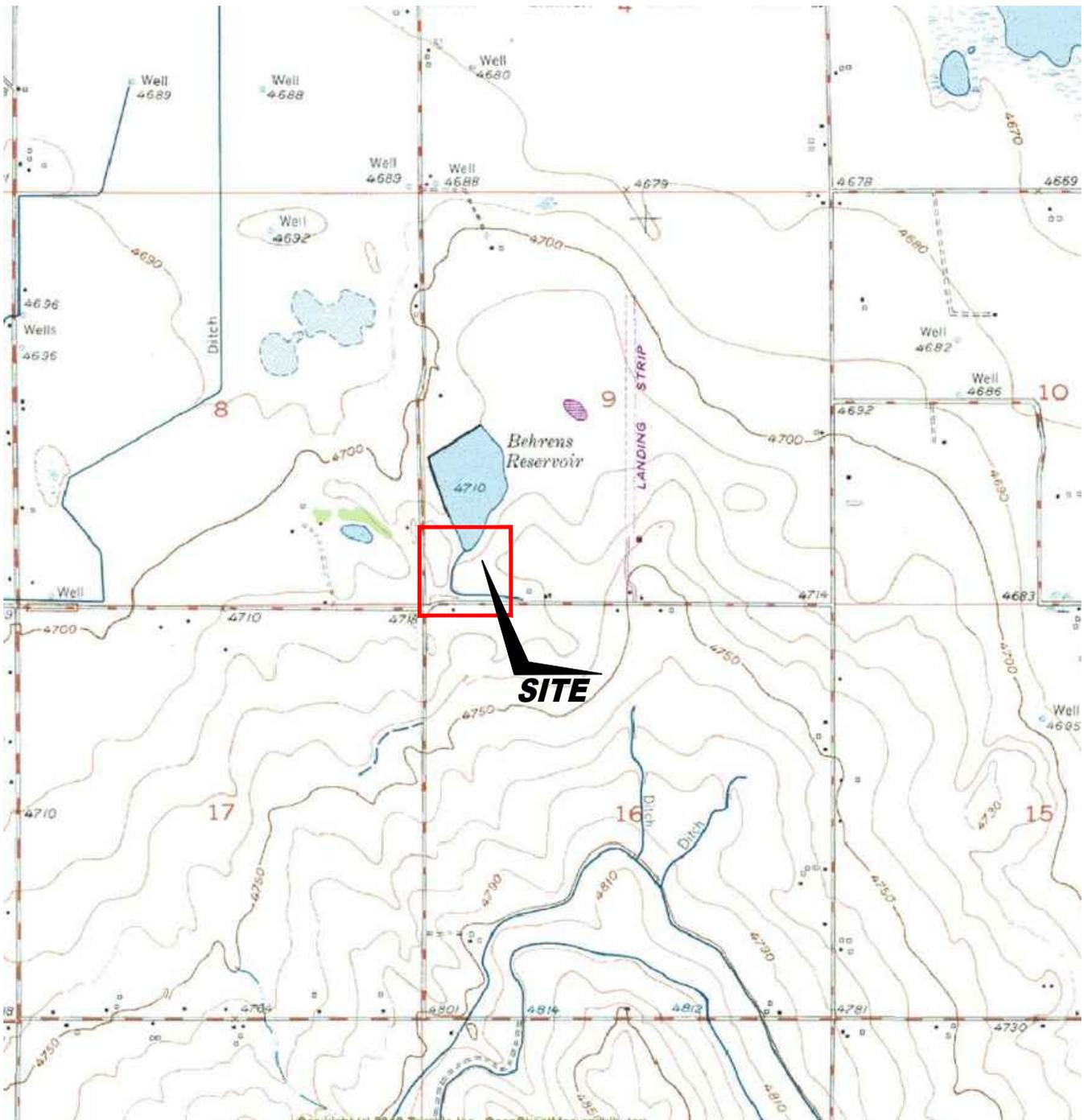
Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

Orange highlighted cells exceed 125% of the maximum background concentration

\* Indicates laboratory minimum detection limit in excess of SSL

Green highlighted cells indicate soil removed via excavation

NA - Not analyzed



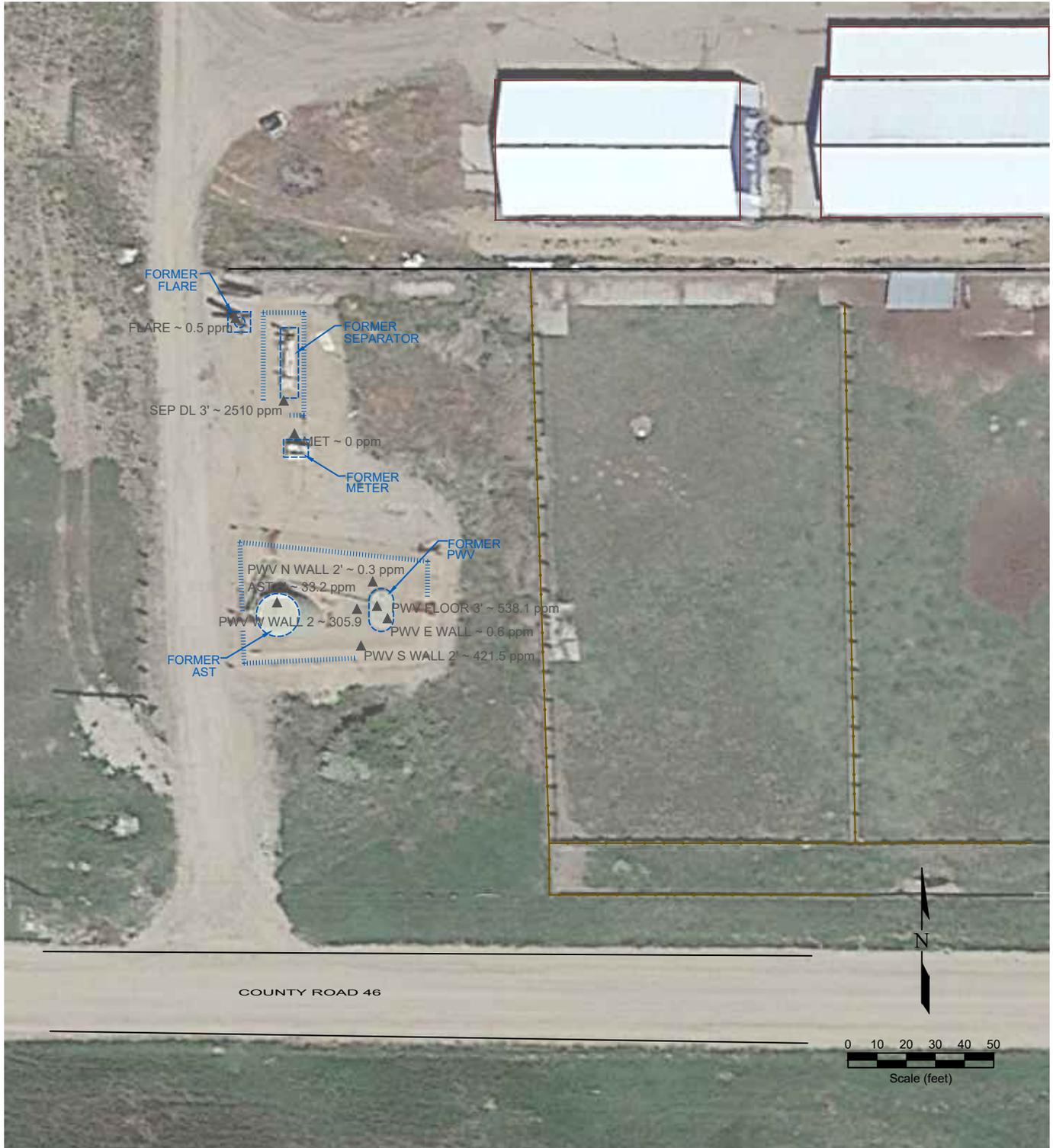
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1  
**SITE LOCATION MAP**  
**NOBLE ~ KNAUB 64N65W 9SWSW**

SWSW Sec. 9, T4N, R65W, 6th PM  
 Weld County, Colorado  
 40.320238°, -104.673833°

Project # <b>C024-021</b>	API #	Facility # <b>328257</b>
Date <b>8/30/24</b>	Remediation # <b>30788</b>	Filename <b>24021TFC</b>





**LEGEND**

- WELL HEAD LOCATION
- ▲ PID READING LOCATION
- ABOVE GROUND STORAGE TANK
- ▭ FORMER FACILITY BUILDING
- ▭ FORMER FACILITY BUILDING
- FENCE LINE
- ▬ CONTAINMENT BERM
- CONTAINMENT WALL

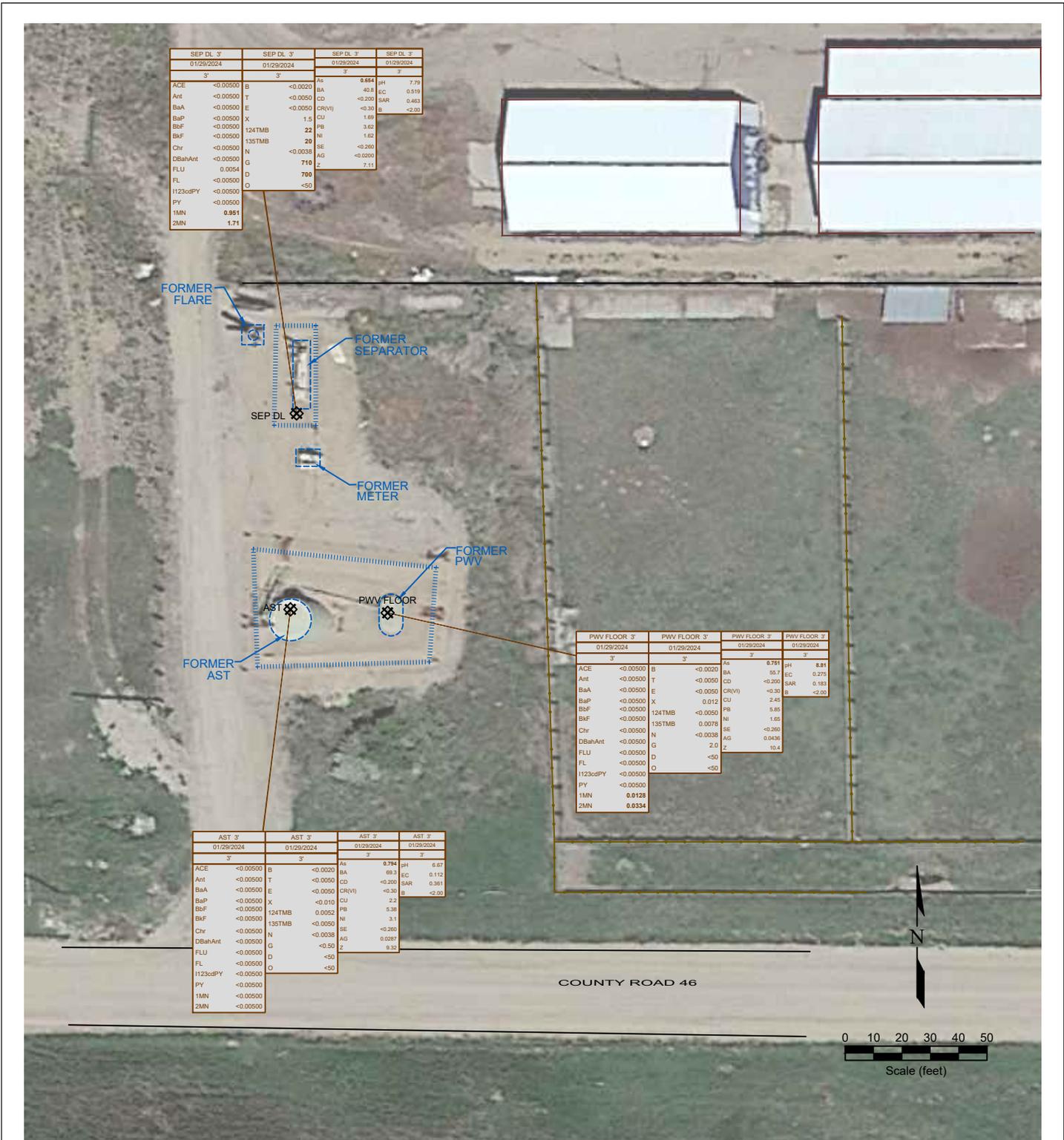
Figure 2  
**SITE MAP**

**NOBLE ~ KNAUB 64N65W 9SWSW**

SWSW Sec. 9, T4N, R65W, 6th PM  
 Weld County, Colorado  
 40.320238°, -104.673833°

Project No. <b>C024-021</b>	API #	Facility # <b>328257</b>
Date <b>8/30/24</b>	Remediation # <b>30788</b>	Filename <b>24021QFC</b>





**LEGEND**

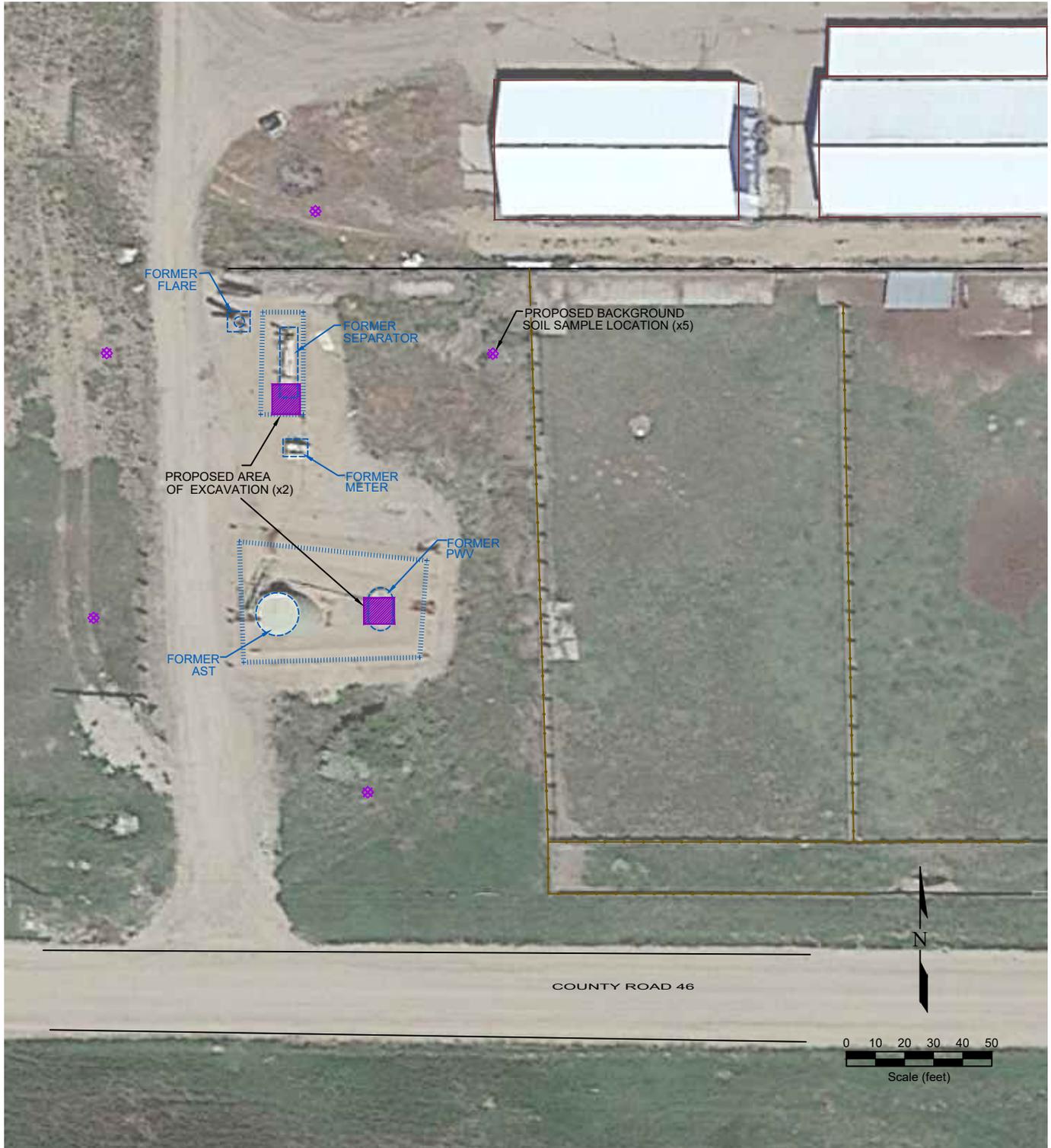
- WELL HEAD LOCATION
- ⊗ SOIL SAMPLE LOCATION
- ABOVE GROUND STORAGE TANK
- ▭ FORMER FACILITY
- ▭ BUILDING
- ▭ BUILDING
- ▭ FENCE LINE
- ▭ CONTAINMENT BERM
- ▭ CONTAINMENT WALL
- NOT ANALYZED

SAMPLE ID	SAMPLE ID	SAMPLE ID	SAMPLE ID	SAMPLE ID	SAMPLE ID
ACE	ACENAPHTHENE (mg/kg)	B	BENZENE (mg/kg)	As	ARSENIC (mg/kg)
Ant	ANTHRACENE (mg/kg)	T	TOLUENE (mg/kg)	BA	BARBIT (mg/kg)
BaA	BENZO (A) ANTHRACENE (mg/kg)	E	ETHYLENEDIENE (mg/kg)	CD	CADMIUM (mg/kg)
BaP	BENZO (B) FLUORANTHENE (mg/kg)	X	TOTAL XYLENES (mg/kg)	CR(V)	CHROMIUM (mg/kg)
BbF	BENZO (K) FLUORANTHENE (mg/kg)			CU	COPPER (mg/kg)
Chr	CHRYSENE (mg/kg)	124TMB	1,2,4-TRIMETHYLBENZENE (mg/kg)	PB	LEAD (mg/kg)
DBahAnt	DIBENZO (A,H) ANTHRACENE (mg/kg)	135TMB	1,3,5-TRIMETHYLBENZENE (mg/kg)	Ni	NICKEL (mg/kg)
FLU	FLUORANTHENE (mg/kg)	N	NAPHTHALENE (mg/kg)	SE	SELENIUM (mg/kg)
FL	FLUORENE (mg/kg)	G	TPH-GRO (mg/kg)	AG	SILVER (mg/kg)
1123cdPY	1,2,3,4-DIBENZO (P) PYRENE (mg/kg)	D	TPH-CRO (mg/kg)	Z	ZINC (mg/kg)
PY	PYRENE (mg/kg)	O			
1MN	1-METHYLNAPHTHALENE (mg/kg)				
2MN	2-METHYLNAPHTHALENE (mg/kg)				

**Figure 3**  
**SOIL CHEMISTRY MAP**  
**NOBLE ~ KNAUB 64N65W 9SWSW**

SWSW Sec. 9, T4N, R65W, 6th PM  
 Weld County, Colorado  
 40.320238°, -104.673833°

Project No. <b>C024-021</b>	API #	Facility # <b>328257</b>
Date <b>8/30/24</b>	Remediation # <b>30788</b>	Filename <b>24021QFC</b>



**LEGEND**

● WELL HEAD LOCATION	○ ABOVE GROUND STORAGE TANK	— FENCE LINE
✳ PROPOSED BACKGROUND SOIL SAMPLE LOCATION	▭ FORMER FACILITY BUILDING	▨ CONTAINMENT BERM
■ PROPOSED AREA OF EXCAVATION	▭ FORMER BUILDING	— CONTAINMENT WALL

Figure 4  
**PROPOSED EXCAVATION AND BACKGROUND SAMPLES MAP**  
**NOBLE ~ KNAUB 64N65W 9SWSW**

SWSW Sec. 9, T4N, R65W, 6th PM  
 Weld County, Colorado  
 40.320238°, -104.673833°

Project No. <b>C024-021</b>	API #	Facility # <b>328257</b>
Date <b>8/30/24</b>	Remediation # <b>30788</b>	Filename <b>24021QFC</b>





***Description:***

#1- AST 0.5' - black/grey staining and strong HC odor



***Description:***

#2- PWV N WALL 2' - No staining or odor



***Description:***

#3- PWV E WALL 2' - No staining or odor



***Description:***

#4- PWV S WALL 2'- black/grey staining and strong HC



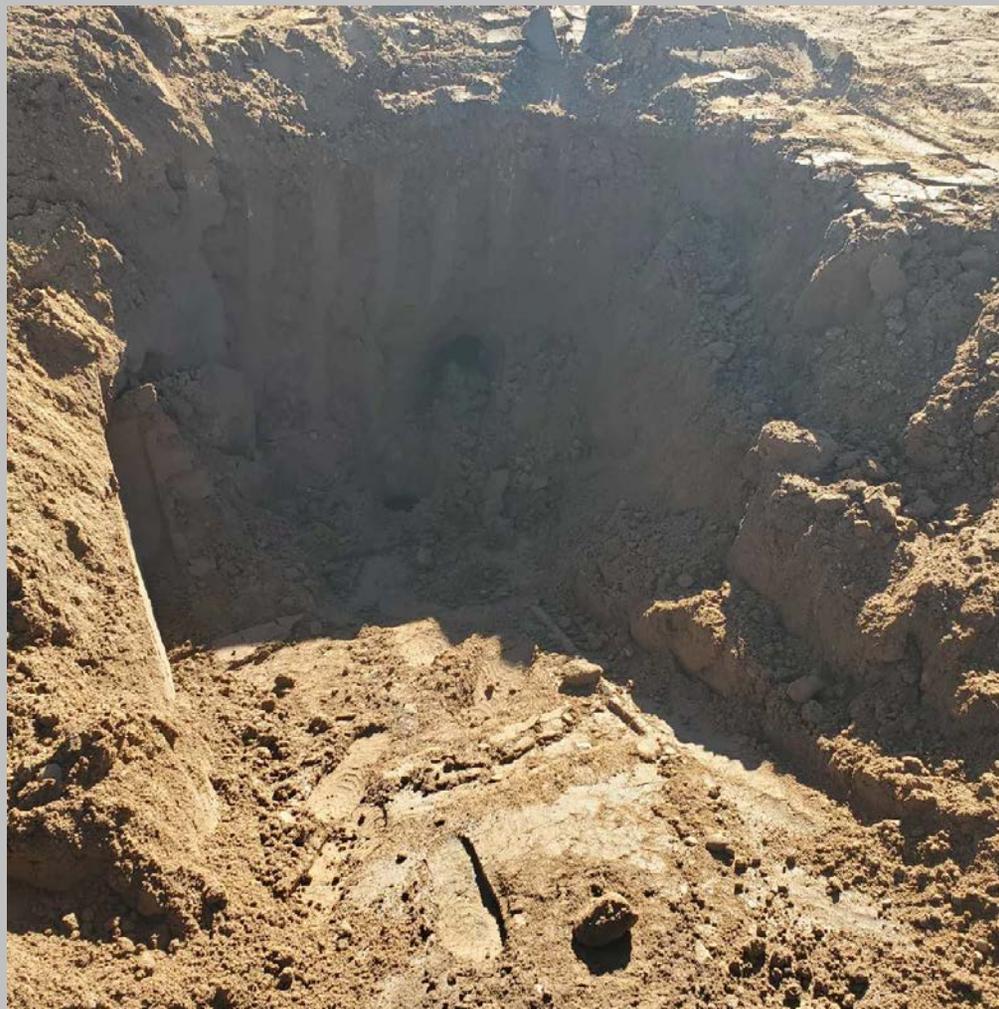
***Description:***

#5- PWV W WALL 2'- grey staining and slight odor



***Description:***

#6- PWV FLOOR 3' - grey staining and strong HC odor



***Description:***

#7- SEP DL 3'- black/grey staining and strong HC odor



***Description:***

#8- FLARE01 0.5' - No staining or odor



***Description:***

#9- MH 0.5' - No staining or odor

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 12, 2024

Paul Henchan

Fremont Environmental

PO Box 1289

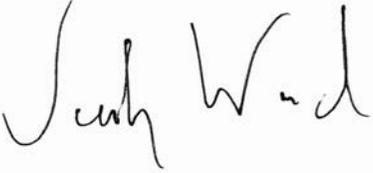
Wellington, CO 80549

RE: Noble - Knaub 64N65W 9SWSW

Work Order #2401555

Enclosed are the results of analyses for samples received by Summit Scientific on 01/30/24 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a distinct "W".

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST 3'	2401555-01	Soil	01/29/24 12:00	01/30/24 16:30
SEP DL 3'	2401555-02	Soil	01/29/24 12:05	01/30/24 16:30
PWV FLOOR 3'	2401555-03	Soil	01/29/24 09:50	01/30/24 16:30

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.*



S<sub>2</sub>

S2 Work Order# 2401555

Sample Receipt Checklist

Client: Fremont Client Project ID: Knaub WYNGSW 9SWSW

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

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

Temp (°C)

Thermometer #

	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"/>	<i>on ice</i>
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>no time stamps</i>
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<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"/>	
<u>Additional Comments (if any):</u>				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS

Custodian Printed Name

1/30/24  
Date/Time



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Knaub 64N65W 9SWSW  
Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

**AST 3'**  
**2401555-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHB0078	02/02/24	02/06/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.0052</b>	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0449	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0367	91.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHB0075	02/02/24	02/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	5.94	47.5 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

**AST 3'**  
**2401555-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHB0067	02/02/24	02/03/24	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: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0186	55.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0192	57.6 %	40-150		"	"	"	"	

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

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHB0238	02/07/24	02/08/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Knaub 64N65W 9SWSW  
Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

**AST 3'**  
**2401555-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.794	0.200	mg/kg dry	1	BHB0140	02/05/24	02/08/24	EPA 6020B	
Barium	69.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.20	0.400	"	"	"	"	"	"	
Lead	5.38	0.200	"	"	"	"	"	"	
Nickel	3.10	0.400	"	"	"	"	"	"	
Silver	0.0287	0.0200	"	"	"	"	"	"	
Zinc	9.32	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHB0032	02/01/24	02/01/24	EPA 7196A	

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

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	75.1	0.0500	mg/L dry	1	BHA1091	01/31/24	02/02/24	EPA 6020B	
Magnesium	6.00	0.0500	"	"	"	"	"	"	
Sodium	12.1	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.361	0.00100	units	1	BHB0185	02/06/24	02/06/24	Calculation	

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

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Fremont Environmental  
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Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 02/12/24 10:33

**AST 3'**  
**2401555-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.3		%	1	BHB0154	02/06/24	02/06/24	Calculation	

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

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.112	0.0100	mmhos/cm	1	BHB0011	02/01/24	02/01/24	EPA 120.1	

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

Date Sampled: **01/29/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.67		pH Units	1	BHB0009	02/01/24	02/01/24	EPA 9045D	

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Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

**SEP DL 3'**  
**2401555-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHB0078	02/02/24	02/06/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>1.5</b>	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>22</b>	0.50	"	100	"	"	02/06/24	"	
<b>1,3,5-Trimethylbenzene</b>	<b>20</b>	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	1	"	"	02/06/24	"	
<b>Gasoline Range Hydrocarbons</b>	<b>710</b>	50	"	100	"	"	02/06/24	"	

Date Sampled: **01/29/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0474	119 %	50-150	"	"	"	02/06/24	"	
Surrogate: Toluene-d8	0.0465	116 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0488	122 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/29/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>700</b>	50	mg/kg	1	BHB0075	02/02/24	02/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/29/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.10	48.8 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
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Wellington CO, 80549

Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

**SEP DL 3'**  
**2401555-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/29/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHB0067	02/02/24	02/03/24	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	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.00540</b>	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.951</b>	0.00500	"	"	"	"	"	"	E
<b>2-Methylnaphthalene</b>	<b>1.71</b>	0.00500	"	"	"	"	"	"	E

Date Sampled: **01/29/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0160	48.1 %	40-150		"	"	"	"	

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

Date Sampled: **01/29/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHB0238	02/07/24	02/08/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/29/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

**SEP DL 3'**  
**2401555-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.654	0.200	mg/kg dry	1	BHB0140	02/05/24	02/08/24	EPA 6020B	
Barium	40.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.69	0.400	"	"	"	"	"	"	
Lead	3.62	0.200	"	"	"	"	"	"	
Nickel	1.62	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	7.11	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 01/29/24 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHB0032	02/01/24	02/01/24	EPA 7196A	

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

Date Sampled: 01/29/24 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	42.6	0.0500	mg/L dry	1	BHA1091	01/31/24	02/02/24	EPA 6020B	
Magnesium	5.51	0.0500	"	"	"	"	"	"	
Sodium	12.1	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 01/29/24 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.463	0.00100	units	1	BHB0185	02/06/24	02/06/24	Calculation	

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

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 Wellington CO, 80549

Project: Noble - Knaub 64N65W 9SWSW  
 Project Number: UWRWE-A3469-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 02/12/24 10:33

**SEP DL 3'**  
**2401555-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.5		%	1	BHB0154	02/06/24	02/06/24	Calculation	

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

Date Sampled: **01/29/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.519	0.0100	mmhos/cm	1	BHB0011	02/01/24	02/01/24	EPA 120.1	

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

Date Sampled: **01/29/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.79		pH Units	1	BHB0009	02/01/24	02/01/24	EPA 9045D	

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Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

**PWV FLOOR 3'**  
**2401555-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHB0078	02/02/24	02/06/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.012</b>	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.0078</b>	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>2.0</b>	0.50	"	"	"	"	"	"	

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0416	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0393	98.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHB0075	02/02/24	02/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.23	65.8 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

**PWV FLOOR 3'**  
**2401555-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHB0067	02/02/24	02/03/24	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>1-Methylnaphthalene</b>	<b>0.0128</b>	0.00500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0334</b>	0.00500	"	"	"	"	"	"	

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0134	40.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0156	46.8 %	40-150		"	"	"	"	

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

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHB0238	02/07/24	02/08/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Knaub 64N65W 9SWSW  
Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

**PWV FLOOR 3'**  
**2401555-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.751	0.200	mg/kg dry	1	BHB0140	02/05/24	02/08/24	EPA 6020B	
Barium	55.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.45	0.400	"	"	"	"	"	"	
Lead	5.85	0.200	"	"	"	"	"	"	
Nickel	1.65	0.400	"	"	"	"	"	"	
Silver	0.0436	0.0200	"	"	"	"	"	"	
Zinc	10.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHB0032	02/01/24	02/01/24	EPA 7196A	

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

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	155	0.0500	mg/L dry	1	BHA1091	01/31/24	02/02/24	EPA 6020B	
Magnesium	19.3	0.0500	"	"	"	"	"	"	
Sodium	9.08	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.183	0.00100	units	1	BHB0185	02/06/24	02/06/24	Calculation	

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

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**Reported:**  
 02/12/24 10:33

**PWV FLOOR 3'**  
**2401555-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.1		%	1	BHB0154	02/06/24	02/06/24	Calculation	

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

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.275	0.0100	mmhos/cm	1	BHB0011	02/01/24	02/01/24	EPA 120.1	

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

Date Sampled: **01/29/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.81		pH Units	1	BHB0009	02/01/24	02/01/24	EPA 9045D	

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Project: Noble - Knaub 64N65W 9SWW

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**Reported:**  
02/12/24 10:33

### 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 BHB0078 - EPA 5030 Soil MS

##### Blank (BHB0078-BLK1)

Prepared: 02/02/24 Analyzed: 02/05/24

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0461		"	0.0400		115	50-150			
<i>Surrogate: Toluene-d8</i>	0.0397		"	0.0400		99.3	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0389		"	0.0400		97.3	50-150			

##### LCS (BHB0078-BS1)

Prepared: 02/02/24 Analyzed: 02/05/24

Benzene	0.100	0.0020	mg/kg	0.100		100	70-130			
Toluene	0.115	0.0050	"	0.100		115	70-130			
Ethylbenzene	0.121	0.0050	"	0.100		121	70-130			
m,p-Xylene	0.246	0.010	"	0.200		123	70-130			
o-Xylene	0.122	0.0050	"	0.100		122	70-130			
1,2,4-Trimethylbenzene	0.119	0.0050	"	0.100		119	70-130			
1,3,5-Trimethylbenzene	0.118	0.0050	"	0.100		118	70-130			
Naphthalene	0.121	0.0038	"	0.100		121	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0422		"	0.0400		106	50-150			
<i>Surrogate: Toluene-d8</i>	0.0362		"	0.0400		90.6	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0388		"	0.0400		97.0	50-150			

##### Matrix Spike (BHB0078-MS1)

Source: 2401549-01

Prepared: 02/02/24 Analyzed: 02/05/24

Benzene	0.0868	0.0020	mg/kg	0.100	ND	86.8	70-130			
Toluene	0.0994	0.0050	"	0.100	ND	99.4	70-130			
Ethylbenzene	0.0945	0.0050	"	0.100	ND	94.5	70-130			
m,p-Xylene	0.194	0.010	"	0.200	ND	97.0	70-130			
o-Xylene	0.0935	0.0050	"	0.100	ND	93.5	70-130			
1,2,4-Trimethylbenzene	0.0849	0.0050	"	0.100	ND	84.9	70-130			
1,3,5-Trimethylbenzene	0.0843	0.0050	"	0.100	ND	84.3	70-130			
Naphthalene	0.0734	0.0038	"	0.100	ND	73.4	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0442		"	0.0400		111	50-150			
<i>Surrogate: Toluene-d8</i>	0.0386		"	0.0400		96.6	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0392		"	0.0400		98.0	50-150			

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 Project Manager: Paul Henchan

**Reported:**  
 02/12/24 10:33

**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 BHB0078 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BHB0078-MSD1)</b>	<b>Source: 2401549-01</b>			<b>Prepared: 02/02/24 Analyzed: 02/05/24</b>						
Benzene	0.0826	0.0020	mg/kg	0.100	ND	82.6	70-130	4.99	30	
Toluene	0.0931	0.0050	"	0.100	ND	93.1	70-130	6.55	30	
Ethylbenzene	0.0911	0.0050	"	0.100	ND	91.1	70-130	3.62	30	
m,p-Xylene	0.185	0.010	"	0.200	ND	92.6	70-130	4.59	30	
o-Xylene	0.0925	0.0050	"	0.100	ND	92.5	70-130	1.10	30	
1,2,4-Trimethylbenzene	0.0787	0.0050	"	0.100	ND	78.7	70-130	7.59	30	
1,3,5-Trimethylbenzene	0.0788	0.0050	"	0.100	ND	78.8	70-130	6.81	30	
Naphthalene	0.0646	0.0038	"	0.100	ND	64.6	70-130	12.7	30	QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0519</i>		<i>"</i>	<i>0.0400</i>		<i>130</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0372</i>		<i>"</i>	<i>0.0400</i>		<i>93.1</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			

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Project: Noble - Knaub 64N65W 9SWSW  
 Project Number: UWRWE-A3469-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 02/12/24 10:33

**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 BHB0075 - EPA 3550A**

**Blank (BHB0075-BLK1)**

Prepared: 02/02/24 Analyzed: 02/05/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.4		"	12.5		83.3	30-150				

**LCS (BHB0075-BS1)**

Prepared: 02/02/24 Analyzed: 02/05/24

C10-C28 (DRO)	427	50	mg/kg	500		85.3	70-130				
Surrogate: <i>o</i> -Terphenyl	9.04		"	12.5		72.3	30-150				

**Matrix Spike (BHB0075-MS1)**

Source: 2401549-01

Prepared: 02/02/24 Analyzed: 02/05/24

C10-C28 (DRO)	433	50	mg/kg	500	16.6	83.4	70-130				
Surrogate: <i>o</i> -Terphenyl	9.80		"	12.5		78.4	30-150				

**Matrix Spike Dup (BHB0075-MSD1)**

Source: 2401549-01

Prepared: 02/02/24 Analyzed: 02/05/24

C10-C28 (DRO)	419	50	mg/kg	500	16.6	80.5	70-130	3.32	20		
Surrogate: <i>o</i> -Terphenyl	9.59		"	12.5		76.7	30-150				

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**Reported:**  
02/12/24 10:33

**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 BHB0067 - EPA 5030 Soil MS**

**Blank (BHB0067-BLK1)**

Prepared & Analyzed: 02/02/24

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>0.0331</i>		"	<i>0.0333</i>		<i>99.4</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0315</i>		"	<i>0.0333</i>		<i>94.5</i>	<i>40-150</i>			

**LCS (BHB0067-BS1)**

Prepared & Analyzed: 02/02/24

Acenaphthene	0.0343	0.00500	mg/kg	0.0333	103	31-137
Anthracene	0.0322	0.00500	"	0.0333	96.5	30-120
Benzo (a) anthracene	0.0306	0.00500	"	0.0333	91.9	30-120
Benzo (a) pyrene	0.0320	0.00500	"	0.0333	95.9	30-120
Benzo (b) fluoranthene	0.0303	0.00500	"	0.0333	90.8	30-120
Benzo (k) fluoranthene	0.0271	0.00500	"	0.0333	81.4	30-120
Chrysene	0.0320	0.00500	"	0.0333	95.9	30-120
Dibenz (a,h) anthracene	0.0281	0.00500	"	0.0333	84.3	30-120
Fluoranthene	0.0310	0.00500	"	0.0333	92.9	30-120
Fluorene	0.0378	0.00500	"	0.0333	113	30-120
Indeno (1,2,3-cd) pyrene	0.0355	0.00500	"	0.0333	106	30-120
Pyrene	0.0274	0.00500	"	0.0333	82.3	35-142
1-Methylnaphthalene	0.0351	0.00500	"	0.0333	105	35-142
2-Methylnaphthalene	0.0350	0.00500	"	0.0333	105	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0329</i>		"	<i>0.0333</i>	<i>98.7</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0308</i>		"	<i>0.0333</i>	<i>92.3</i>	<i>40-150</i>

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**Reported:**  
02/12/24 10:33

**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 BHB0067 - EPA 5030 Soil MS**

**Matrix Spike (BHB0067-MS1)**

Source: 2401543-11

Prepared & Analyzed: 02/02/24

Acenaphthene	0.0239	0.00500	mg/kg	0.0333	ND	71.7	31-137		
Anthracene	0.0185	0.00500	"	0.0333	ND	55.6	30-120		
Benzo (a) anthracene	0.0160	0.00500	"	0.0333	ND	48.0	30-120		
Benzo (a) pyrene	0.0166	0.00500	"	0.0333	ND	49.8	30-120		
Benzo (b) fluoranthene	0.0161	0.00500	"	0.0333	ND	48.3	30-120		
Benzo (k) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.1	30-120		
Chrysene	0.0165	0.00500	"	0.0333	ND	49.4	30-120		
Dibenz (a,h) anthracene	0.0255	0.00500	"	0.0333	ND	76.6	30-120		
Fluoranthene	0.0184	0.00500	"	0.0333	ND	55.3	30-120		
Fluorene	0.0226	0.00500	"	0.0333	ND	67.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0278	0.00500	"	0.0333	ND	83.3	30-120		
Pyrene	0.0221	0.00500	"	0.0333	ND	66.3	35-142		
1-Methylnaphthalene	0.0206	0.00500	"	0.0333	ND	61.9	15-130		
2-Methylnaphthalene	0.0215	0.00500	"	0.0333	ND	64.6	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0201		"	0.0333		60.2	40-150		
Surrogate: Fluoranthene-d10	0.0188		"	0.0333		56.3	40-150		

**Matrix Spike Dup (BHB0067-MSD1)**

Source: 2401543-11

Prepared & Analyzed: 02/02/24

Acenaphthene	0.0200	0.00500	mg/kg	0.0333	ND	60.1	31-137	17.6	30
Anthracene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	4.06	30
Benzo (a) anthracene	0.0191	0.00500	"	0.0333	ND	57.4	30-120	17.8	30
Benzo (a) pyrene	0.0179	0.00500	"	0.0333	ND	53.6	30-120	7.30	30
Benzo (b) fluoranthene	0.0189	0.00500	"	0.0333	ND	56.8	30-120	16.0	30
Benzo (k) fluoranthene	0.0186	0.00500	"	0.0333	ND	55.8	30-120	12.7	30
Chrysene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	12.3	30
Dibenz (a,h) anthracene	0.0209	0.00500	"	0.0333	ND	62.7	30-120	19.9	30
Fluoranthene	0.0196	0.00500	"	0.0333	ND	58.7	30-120	5.94	30
Fluorene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	17.5	30
Indeno (1,2,3-cd) pyrene	0.0225	0.00500	"	0.0333	ND	67.4	30-120	21.1	30
Pyrene	0.0209	0.00500	"	0.0333	ND	62.8	35-142	5.43	30
1-Methylnaphthalene	0.0200	0.00500	"	0.0333	ND	60.0	15-130	3.02	50
2-Methylnaphthalene	0.0192	0.00500	"	0.0333	ND	57.7	15-130	11.3	50
Surrogate: 2-Methylnaphthalene-d10	0.0189		"	0.0333		56.6	40-150		
Surrogate: Fluoranthene-d10	0.0197		"	0.0333		59.0	40-150		

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**Reported:**  
 02/12/24 10:33

**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 BHB0238 - EPA 3050B**

**Blank (BHB0238-BLK1)**

Prepared: 02/07/24 Analyzed: 02/08/24

Boron ND 2.00 mg/L

**LCS (BHB0238-BS1)**

Prepared: 02/07/24 Analyzed: 02/08/24

Boron 5.04 2.00 mg/L 5.00 101 80-120

**Duplicate (BHB0238-DUP1)**

Source: 2401555-01

Prepared: 02/07/24 Analyzed: 02/08/24

Boron 0.149 2.00 mg/L 0.134 10.9 20

**Matrix Spike (BHB0238-MS1)**

Source: 2401555-01

Prepared: 02/07/24 Analyzed: 02/08/24

Boron 5.02 2.00 mg/L 5.00 0.134 97.7 75-125

**Matrix Spike Dup (BHB0238-MSD1)**

Source: 2401555-01

Prepared: 02/07/24 Analyzed: 02/08/24

Boron 4.98 2.00 mg/L 5.00 0.134 96.8 75-125 0.869 25

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**Reported:**  
02/12/24 10:33

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

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

**Batch BHB0140 - EPA 3050B**

**Blank (BHB0140-BLK1)**

Prepared: 02/05/24 Analyzed: 02/08/24

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 (BHB0140-BS1)**

Prepared: 02/05/24 Analyzed: 02/08/24

Arsenic	43.1	0.200	mg/kg wet	40.0	108	80-120
Barium	36.9	0.400	"	40.0	92.3	80-120
Cadmium	1.90	0.200	"	2.00	95.0	80-120
Copper	42.5	0.400	"	40.0	106	80-120
Lead	18.9	0.200	"	20.0	94.4	80-120
Nickel	42.1	0.400	"	40.0	105	80-120
Silver	1.95	0.0200	"	2.00	97.7	80-120
Zinc	42.5	0.400	"	40.0	106	80-120
Selenium	4.74	0.260	"	4.00	118	80-120

**Duplicate (BHB0140-DUP1)**

Source: 2401535-01

Prepared: 02/05/24 Analyzed: 02/08/24

Arsenic	0.802	0.200	mg/kg dry	0.743	7.69	20	
Barium	112	0.400	"	69.7	46.7	20	QR-04
Cadmium	0.173	0.200	"	0.162	6.45	20	
Copper	2.74	0.400	"	2.34	15.7	20	
Lead	5.36	0.200	"	4.79	11.3	20	
Nickel	1.84	0.400	"	1.71	6.87	20	
Silver	0.0189	0.0200	"	0.0162	15.4	20	
Zinc	7.16	0.400	"	6.98	2.51	20	
Selenium	ND	0.260	"	ND		20	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

**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 BHB0140 - EPA 3050B**

**Matrix Spike (BHB0140-MS1)**

Source: 2401535-01

Prepared: 02/05/24 Analyzed: 02/08/24

Arsenic	16.6	0.200	mg/kg dry	45.0	0.743	35.1	75-125				QM-07
Barium	206	0.400	"	45.0	69.7	304	75-125				QM-07
Cadmium	2.22	0.200	"	2.25	0.162	91.3	75-125				
Copper	19.8	0.400	"	45.0	2.34	38.8	75-125				QM-07
Lead	24.1	0.200	"	22.5	4.79	85.8	75-125				
Nickel	17.8	0.400	"	45.0	1.71	35.6	75-125				QM-07
Silver	2.05	0.0200	"	2.25	0.0162	90.5	75-125				
Zinc	23.9	0.400	"	45.0	6.98	37.6	75-125				QM-07
Selenium	5.07	0.260	"	4.50	ND	113	75-125				

**Matrix Spike Dup (BHB0140-MSD1)**

Source: 2401535-01

Prepared: 02/05/24 Analyzed: 02/08/24

Arsenic	16.6	0.200	mg/kg dry	45.0	0.743	35.2	75-125	0.288	25		QM-07
Barium	227	0.400	"	45.0	69.7	350	75-125	9.58	25		QM-07
Cadmium	2.43	0.200	"	2.25	0.162	101	75-125	9.38	25		
Copper	19.9	0.400	"	45.0	2.34	38.9	75-125	0.381	25		QM-07
Lead	26.5	0.200	"	22.5	4.79	96.4	75-125	9.50	25		
Nickel	17.7	0.400	"	45.0	1.71	35.6	75-125	0.172	25		QM-07
Silver	2.24	0.0200	"	2.25	0.0162	99.0	75-125	8.82	25		
Zinc	24.2	0.400	"	45.0	6.98	38.3	75-125	1.27	25		QM-07
Selenium	5.00	0.260	"	4.50	ND	111	75-125	1.30	25		

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Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 02/12/24 10:33

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

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

**Batch BHB0032 - 3060A Mod**

**Blank (BHB0032-BLK1)**

Prepared & Analyzed: 02/01/24

Chromium, Hexavalent      ND      0.30 mg/kg wet

**LCS (BHB0032-BS1)**

Prepared & Analyzed: 02/01/24

Chromium, Hexavalent      24.5      0.30 mg/kg wet      25.0      98.0      80-120

**Duplicate (BHB0032-DUP1)**

**Source: 2401533-01**

Prepared & Analyzed: 02/01/24

Chromium, Hexavalent      ND      0.30 mg/kg dry      ND      20

**Matrix Spike (BHB0032-MS1)**

**Source: 2401533-01**

Prepared & Analyzed: 02/01/24

Chromium, Hexavalent      23.3      0.30 mg/kg dry      25.9      ND      89.8      75-125

**Matrix Spike Dup (BHB0032-MSD1)**

**Source: 2401533-01**

Prepared & Analyzed: 02/01/24

Chromium, Hexavalent      23.5      0.30 mg/kg dry      25.9      ND      90.8      75-125      1.11      20

Summit Scientific

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Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 02/12/24 10:33

**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 BHA1091 - General Preparation**

**Blank (BHA1091-BLK1)**

Prepared: 01/31/24 Analyzed: 02/02/24

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

**LCS (BHA1091-BS1)**

Prepared: 01/31/24 Analyzed: 02/02/24

Calcium	5.49	0.0500	mg/L wet	5.00	110	70-130				
Magnesium	5.02	0.0500	"	5.00	100	70-130				
Sodium	5.09	0.0500	"	5.00	102	70-130				

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Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 02/12/24 10:33

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

**Summit Scientific**

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

**Batch BHB0154 - General Preparation**

Duplicate (BHB0154-DUP1)	Source: 2401533-01			Prepared & Analyzed: 02/06/24								
% Solids	96.5		%		96.4				0.114		20	

Summit Scientific



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Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 02/12/24 10:33

**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 BHB0011 - General Preparation**

**Blank (BHB0011-BLK1)**

Prepared & Analyzed: 02/01/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHB0011-BS1)**

Prepared & Analyzed: 02/01/24

Specific Conductance (EC) 0.157 0.0100 mmhos/cm 0.150 105 95-105

**Duplicate (BHB0011-DUP1)**

Source: 2401549-01

Prepared & Analyzed: 02/01/24

Specific Conductance (EC) 0.124 0.0100 mmhos/cm 0.125 0.966 20

Summit Scientific

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Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 02/12/24 10:33

**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 BHB0009 - General Preparation**

**LCS (BHB0009-BS1)**

Prepared & Analyzed: 02/01/24

pH	9.12	pH Units	9.18	99.3	95-105
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**Duplicate (BHB0009-DUP1)**

Source: 2401545-01

Prepared & Analyzed: 02/01/24

pH	7.87	pH Units	7.90	0.380	20
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Summit Scientific

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Knaub 64N65W 9SWSW

Project Number: UWRWE-A3469-ABN  
Project Manager: Paul Henchan

**Reported:**  
02/12/24 10:33

### Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- 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.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference