

# **FREMONT ENVIRONMENTAL INC.**

March 14, 2024

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

Subject:       **Facility Closure Data Submittal**  
ARENS G 22-22D  
SENE Sec. 22, T4N, R65W  
Weld County, Colorado  
Fremont Project No. C023-271  
Facility # 322598, Remediation # 30388

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted facility closure activities for the Noble Energy Inc. (Noble) Arens G 22-22D. Impacted soil was not encountered during abandonment activities. Details of the Arens G 22-22D facility closure activities are documented in the attached Closure Report. Groundwater was not encountered during facility abandonment activities.

Please contact me at (336) 541-3048 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

**FREMONT ENVIRONMENTAL INC.**



Aaron Otillar  
Consultant

Attachments:

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

**1759 REDWING LANE, BROOMFIELD, CO 80020**  
**(303) 956-8714 (DIRECT)**

# Tank Battery Closure Checklist

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

Additional attachments (optional):		Pit Closure		Wellhead Closure		Flowline Closure		Partially Buried Vault Closure
Site Name & COGCC Facility Number:		Date:						Remediation Project #:
Associated Wells:		Age of Site:						Number of Photos Attached:
Location: (GPS coordinates of southeaster berm)								Estimated Facility Size (acres):
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)								
USCS Soil Type:					Estimated Depth to Groundwater:			
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or 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)								
<b>Tanks</b>								
Tank Contents								
Size (barrels)								
Age								
Construction Material								
Tank type (AST/DRU, etc.)								
Visual Integrity of Tank								
Condition of tank footprint								
PID Readings								
Soil impacts present at valves or hatches?								
PID Readings								
Sample taken? Location/ Sample ID#								
Photo Number(s)								
Other observations regarding tanks:								
<b>Separators</b>								
Separator size								
Vertical or Horizontal								
Age								
Soil impacts observed? If yes,								
PID Readings								
Sample taken? Location/ Sample ID#								
Photo Number(s)								
Other observations regarding separators								
<b>Third Party Equipment</b>								
Type								
Age								

Third Party <i>Owner</i>														
Removal Date														
Sample taken? <i>Location/ Sample</i>														
PID Readings														
Photo Number(s)														
<b>Other Facility Equipment</b>														
Equipment type														
Equipment <i>Condition</i>														
Age														
Soil impacts <i>Observed during</i>														
PID Readings														
Sample taken? <i>Location/ Sample</i>														
Photo Number(s)														
Other observations regarding other facility or third party equipment:														
<b>Summary</b>														
Was impacted soil identified?														
<div> <div>No</div> <div>Yes - less than 10 cubic yards</div> <div>Yes - more than 10 cubic yards</div> </div>														
Total number of samples field screened:					Total number of samples collected:									
Highest PID Reading:					Total number of samples submitted to lab for analysis:									
If more than 10 cubic yards of impacted soil were observed:														
Vertical extent:					Estimated spill volume:									
Lateral extent:					Volume of soil removed:									
Is additional investigation required?														
Was groundwater encountered during the investigation?														
<div> <div>No</div> <div>Yes - not impacted or in contact with impacted soils</div> <div>Yes - groundwater impacted and/or in contact with impacted soils</div> </div>														
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:														

## 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:		Date:						Remediation Project #:
Associated Wells:		Age of Site:						Number of Photos Attached:
Location: (GPS coordinates of vault or southeastern tank berm for multiple)								Estimated Facility Size (acres):
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)								
USCS Soil Type:					Estimated Depth to Groundwater:			
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or 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)								
<b>Buried or Partially Buried Vessels</b>								
Tank Contents								
Size (barrels)								
Age								
Construction Material								
Visual Integrity of Tank								
Condition of tank Foundation								
PID Readings								
Condition of Access Ladder								
PID Readings								
Sample taken? Location/Sample ID#								
Photo Number(s)								
Other observations regarding partially buried vessels:								
<b>Summary</b>								
Was impacted soil identified? <div style="display: flex; justify-content: space-between;"> <span>No</span> <span>Yes - less than 10 cubic yards</span> <span>Yes - more than 10 cubic yards</span> </div>								
Total number of samples field screened:					Total number of samples collected:			
Highest PID Reading:					Total number of samples submitted to lab for analysis:			
If more than 10 cubic yards of impacted soil were observed:								
Vertical extent:					Estimated spill volume:			
Lateral extent:					Volume of soil removed:			
Is additional investigation required?								
Was groundwater encountered during the investigation? <div style="display: flex; justify-content: space-between;"> <span>No</span> <span>Yes - not impacted or in contact with impacted soils</span> <span>Yes - groundwater impacted and/or in contact with impacted soils</span> </div>								
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.**  
**GRANT ARENS 02 FACILITY, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C023-271**

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)
COGCC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500**		
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500**		
AST01@0.5'	10/23/2023	0.5'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
AST02@0.5'	10/23/2023	0.5'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
PWV01-B@5'	10/23/2023	5'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
PWV01-E@4'	10/23/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
SEP01-DL@4'	10/23/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
SEP02-DL@4'	10/23/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50

Bold faced values exceed the COGCC 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

\*\* 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.  
GRANT ARENS 02 FACILITY, WELD COUNTY, COLORADO  
FREMONT PROJECT NO. C023-271

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)
COGCC 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
COGCC 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
AST01@0.5'	10/23/2023	0.5'	<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
AST02@0.5'	10/23/2023	0.5'	<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
PWV01-B@5'	10/23/2023	5'	<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
PWV01-E@4'	10/23/2023	4'	<0.00500	<0.00500	0.00744	0.0126	0.0123	0.00746	0.00894	<0.00500	0.0122	<0.00500	0.00671	0.0189	<0.00500	<0.00500
SEP01-DL@4'	10/23/2023	4'	<0.00500	<0.00500	<0.00500	0.00793	0.00576	<0.00500	<0.00500	<0.00500	0.00667	<0.00500	<0.00500	0.00791	<0.00500	<0.00500
SEP02-DL@4'	10/23/2023	4'	<0.00500	<0.00500	<0.00500	0.00808	0.00529	0.00506	<0.00500	<0.00500	0.0072	<0.00500	<0.00500	0.0106	<0.00500	<0.00500

Bold faced values exceed the COGCC 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

**TABLE 3**  
**SUMMARY OF SOIL SUITABILITY FOR RECLAMATION**  
**NOBLE ENERGY INC.**  
**GRANT ARENS 02 FACILITY, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C023-271**

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
COGCC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
AST01@0.5'	10/23/2023	0.5'	6.73	0.025	0.237	<2.00
AST02@0.5'	10/23/2023	0.5'	5.91	0.012	0.0889	<2.00
PWV01-B@5'	10/23/2023	5'	8.61	0.268	0.281	<2.00
PWV01-E@4'	10/23/2023	4'	7.67	0.13	0.0792	<2.00
SEP01-DL@4'	10/23/2023	4'	8.02	0.178	0.0743	<2.00
SEP02-DL@4'	10/23/2023	4'	8.2	0.133	0.0322	<2.00
BKG01@0.5'	10/23/2023	0.5'	7.76	0.428	1.76	<2.00
BKG01@4'	10/23/2023	4'	8.08	0.431	1.19	<2.00
BKG01@5'	10/23/2023	5'	7.88	0.554	2.34	<2.00
BKG02@0.5'	10/23/2023	0.5'	8.03	0.522	1.9	<2.00
BKG02@4'	10/23/2023	4'	7.97	0.4	1.27	<2.00
BKG02@5'	10/23/2023	5'	7.69	0.536	2.34	<2.00
BKG03@0.5'	10/23/2023	0.5'	7.69	0.582	1.67	<2.00
BKG03@4'	10/23/2023	4'	7.68	0.393	1.09	<2.00
BKG03@5'	10/23/2023	5'	7.63	0.457	1.86	<2.00
BKG04@0.5'	10/23/2023	0.5'	8.02	0.349	1.81	<2.00
BKG04@4'	10/23/2023	4'	8.11	0.166	0.893	<2.00
BKG04@5'	10/23/2023	5'	7.69	0.549	2.4	<2.00
BKG05@0.5'	10/23/2023	0.5'	7.72	0.36	1.94	<2.00
BKG05@4'	10/23/2023	4'	8.27	0.28	1.08	<2.00
BKG05@5'	10/23/2023	5'	7.59	0.482	2.3	<2.00

Bold faced values exceed the COGCC Table 915-1 concentrations

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.  
GRANT ARENS 02 FACILITY, WELD COUNTY, COLORADO  
FREMONT PROJECT NO. C023-271

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)
COGCC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
AST01@0.5'	10/23/2023	0.5'	<b>0.667</b>	7.03	<0.200	<0.30	15.4	1.68	5.62	<0.260	<0.0200	2.74
AST02@0.5'	10/23/2023	0.5'	<b>0.334</b>	5.43	<0.200	<0.30	0.523	1.27	<0.400	<0.260	<0.0200	2.18
PWV01-B@5'	10/23/2023	5'	<b>1.69</b>	<b>102</b>	0.26	<0.30	2.44	6.55	2.82	<0.260	0.0323	10
PWV01-E@4'	10/23/2023	4'	<b>1.54</b>	67.7	<b>0.618</b>	<0.30	6.87	<b>31.8</b>	2.42	<b>0.286</b>	0.322	58.5
SEP01-DL@4'	10/23/2023	4'	<b>1.3</b>	69.5	<b>0.594</b>	<0.30	6.29	<b>21.6</b>	2.27	<0.260	0.308	31.9
SEP02-DL@4'	10/23/2023	4'	<b>1.08</b>	62	<b>0.524</b>	<0.30	5.07	<b>16.3</b>	2	<0.260	0.198	20.3
BKG01@0.5'	10/23/2023	0.5'	<b>1.11</b>	59.8	<b>0.542</b>	<0.30	5.49	<b>18</b>	2.23	<b>0.354</b>	0.272	23.3
BKG01@4'	10/23/2023	4'	<b>1.03</b>	55.3	<b>0.432</b>	<0.30	4.81	<b>14.6</b>	2.1	<b>0.268</b>	0.197	18.5
BKG01@5'	10/23/2023	5'	<b>0.926</b>	65.3	0.343	<0.30	3.63	10.6	2.33	<0.260	0.0886	12.2
BKG02@0.5'	10/23/2023	0.5'	<b>1.12</b>	47.3	<b>0.453</b>	<0.30	5.61	<b>14.8</b>	2.22	<b>0.265</b>	0.223	22.6
BKG02@4'	10/23/2023	4'	<b>0.981</b>	60.1	<b>0.518</b>	<0.30	4.71	<b>17.7</b>	1.88	<0.260	0.256	18.2
BKG02@5'	10/23/2023	5'	<b>0.981</b>	<b>98.5</b>	0.303	<0.30	3.15	9.91	2.57	<0.260	0.064	10.6
BKG03@0.5'	10/23/2023	0.5'	<b>1.11</b>	59.6	<b>0.567</b>	<0.30	5.45	<b>18.7</b>	2.23	<b>0.286</b>	0.287	22.9
BKG03@4'	10/23/2023	4'	<b>0.962</b>	55.9	<b>0.463</b>	<0.30	4.53	<b>14.5</b>	2.14	<0.260	0.159	16.5
BKG03@5'	10/23/2023	5'	<b>1.03</b>	<b>109</b>	0.282	<0.30	2.94	8.6	2.94	<0.260	0.0514	10.7
BKG04@0.5'	10/23/2023	0.5'	<b>1.12</b>	65.1	<b>0.609</b>	<0.30	5.57	<b>20.6</b>	2.28	<b>0.322</b>	0.317	24.2
BKG04@4'	10/23/2023	4'	<b>0.969</b>	61.3	<b>0.511</b>	<0.30	4.72	<b>16.7</b>	2.03	<0.260	0.214	17.8
BKG04@5'	10/23/2023	5'	<b>0.96</b>	81.5	<b>0.436</b>	<0.30	3.7	12	2.49	<0.260	0.105	12.6
BKG05@0.5'	10/23/2023	0.5'	<b>1.12</b>	61.2	<b>0.563</b>	<0.30	5.38	<b>19.1</b>	2.23	<b>0.418</b>	0.287	23
BKG05@4'	10/23/2023	4'	<b>1.05</b>	47.7	<b>0.437</b>	<0.30	5.28	<b>14.9</b>	1.99	<0.260	0.203	19.4
BKG05@5'	10/23/2023	5'	<b>1.02</b>	70.9	0.283	<0.30	3.49	9.27	2.66	<b>0.261</b>	0.0754	12

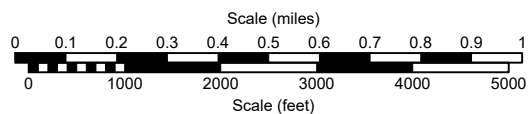
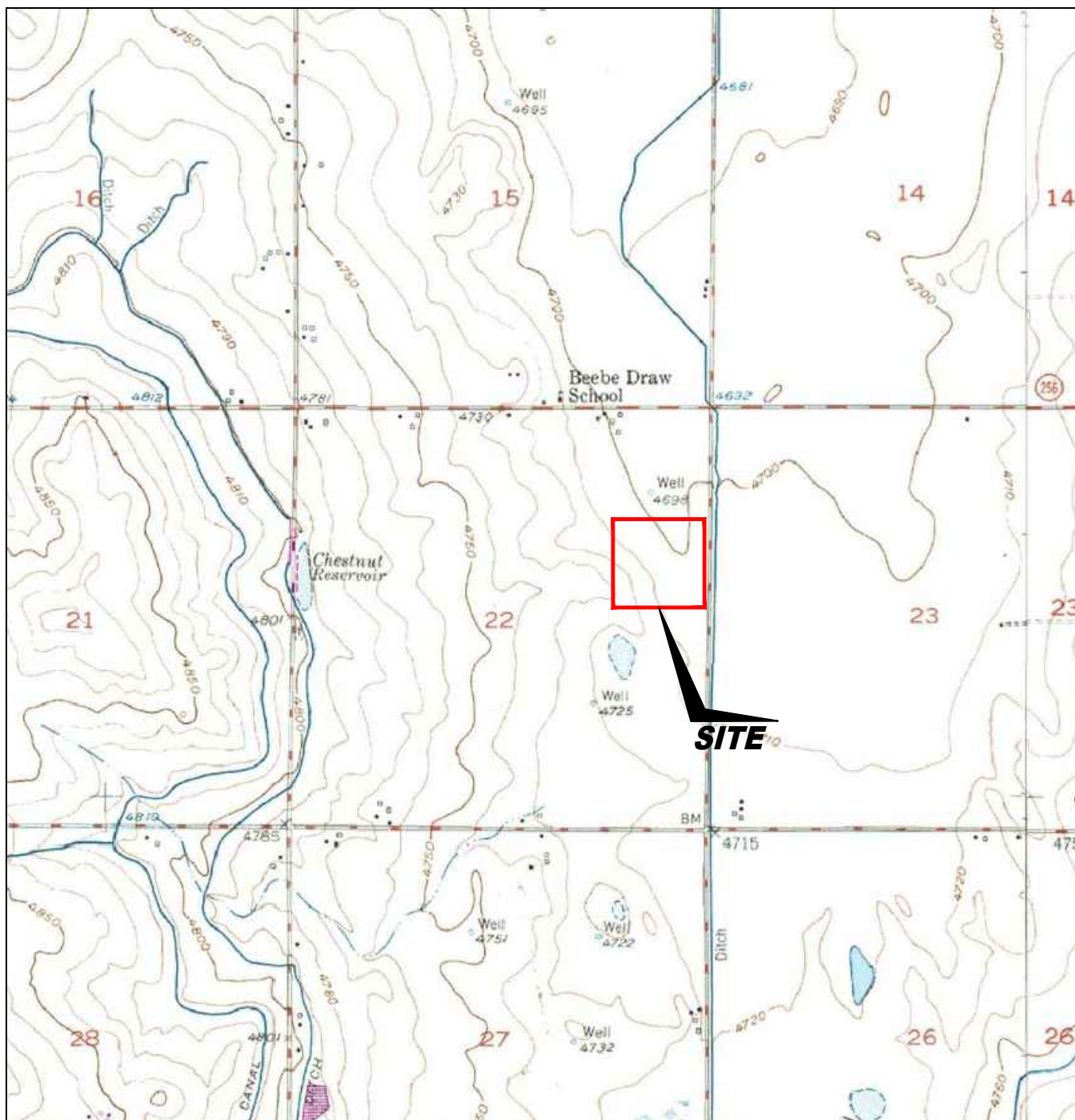
Bold faced values exceed the COGCC Table 915-1 concentrations

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





USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1

**SITE LOCATION MAP**  
**NOBLE ENERGY INC ~ ARENS 02**

SESE Sec. 22, T4N, R65W, 6th PM  
Weld County, Colorado  
40.299750°, -104.642230°

Project # <b>C023-271</b>	API #	Facility # <b>322598</b>
Date <b>5/22/24</b>	Remediation # <b>30388</b>	Filename <b>23271T</b>





#### LEGEND

▲ PID READING LOCATION	▲ AST ABOVE GROUND STORAGE TANK	FORMER FLOWLINE
FORMER FACILITY	FENCE LINE	CONTAINMENT BERM
		CONTAINMENT WALL

Figure 2  
SITE MAP

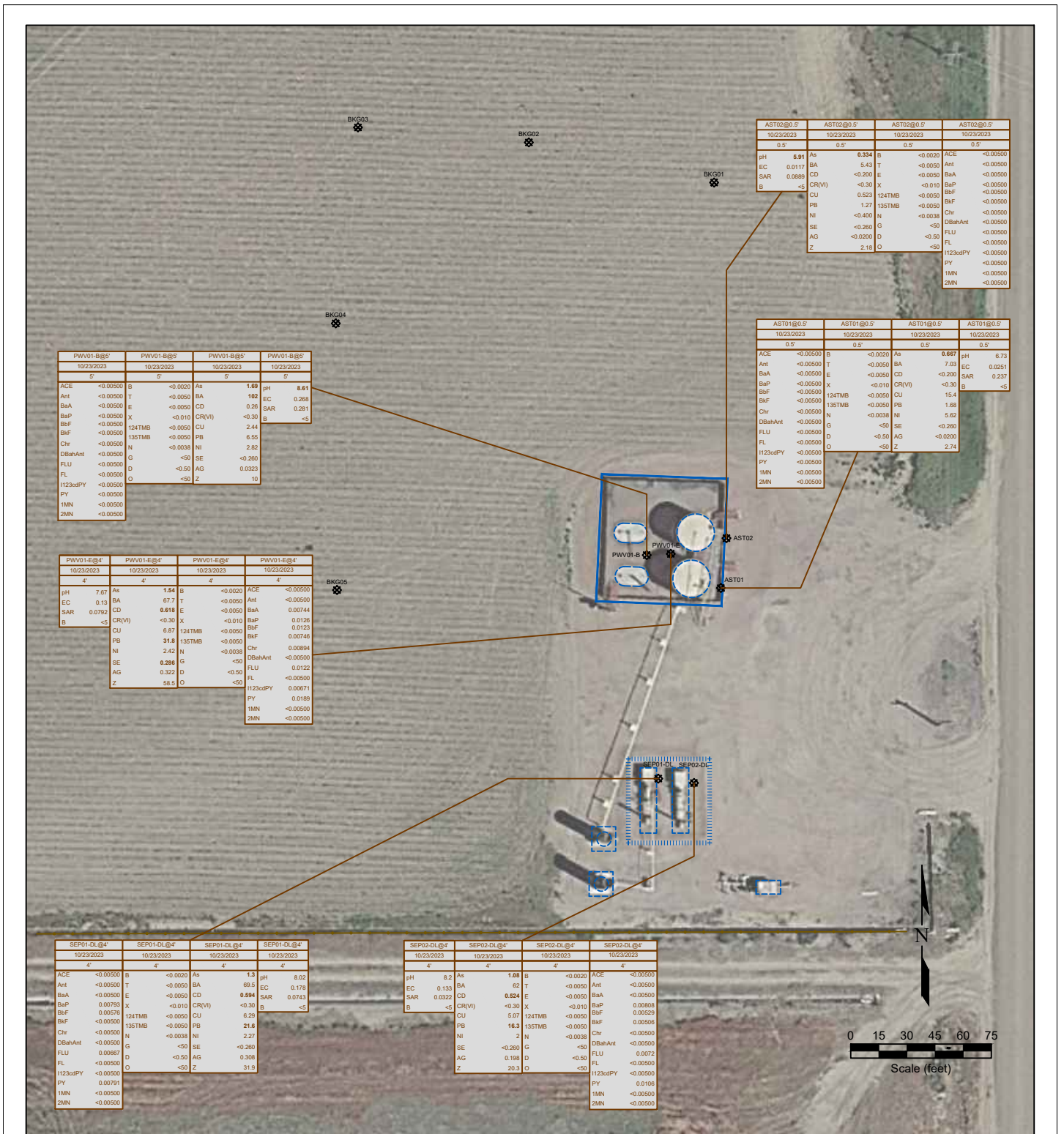
#### NOBLE ENERGY INC ~ ARENS 02

SESE Sec. 22, T4N, R65W, 6th PM  
 Weld County, Colorado  
 40.299750°, -104.642230°

Project No. <b>C023-271</b>	API #	Facility # <b>322598</b>
Date <b>5/22/24</b>	Remediation # <b>30388</b>	Filename <b>23271Q</b>







LEGEND		FORMER FLOWLINE	
	SOIL SAMPLE LOCATION		FORMER FACILITY
	ABOVE GROUND STORAGE TANK		FENCE LINE
	FORMER		CONTAINMENT BERM
	NOT ANALYZED		CONTAINMENT WALL

SAMPLE ID	DATE	DEPTH	SAMPLE ID	DATE	DEPTH	SAMPLE ID	DATE	DEPTH	SAMPLE ID	DATE	DEPTH
ACE	<0.00500	B	124TMB	<0.00500	N	124TMB	<0.00500	N	124TMB	<0.00500	N
Ant	<0.00500	T	135TMB	<0.00500	P	135TMB	<0.00500	P	135TMB	<0.00500	P
BaA	<0.00500	E	135TMB	<0.00500	N	135TMB	<0.00500	N	135TMB	<0.00500	N
BaP	<0.00500	X	135TMB	<0.00500	N	135TMB	<0.00500	N	135TMB	<0.00500	N
BbF	<0.00500	CU	135TMB	<0.00500	N	135TMB	<0.00500	N	135TMB	<0.00500	N
BkF	<0.00500	CU	135TMB	<0.00500	N	135TMB	<0.00500	N	135TMB	<0.00500	N
Chr	<0.00500	N	135TMB	<0.00500	N	135TMB	<0.00500	N	135TMB	<0.00500	N
DBahAnt	<0.00500	G	135TMB	<0.00500	N	135TMB	<0.00500	N	135TMB	<0.00500	N
FLU	<0.00500	D	135TMB	<0.00500	N	135TMB	<0.00500	N	135TMB	<0.00500	N
H123cdPY	<0.00500	O	135TMB	<0.00500	N	135TMB	<0.00500	N	135TMB	<0.00500	N
1MN	<0.00500	O	135TMB	<0.00500	N	135TMB	<0.00500	N	135TMB	<0.00500	N
2MN	<0.00500	O	135TMB	<0.00500	N	135TMB	<0.00500	N	135TMB	<0.00500	N

Figure 3

**SOIL CHEMISTRY MAP**

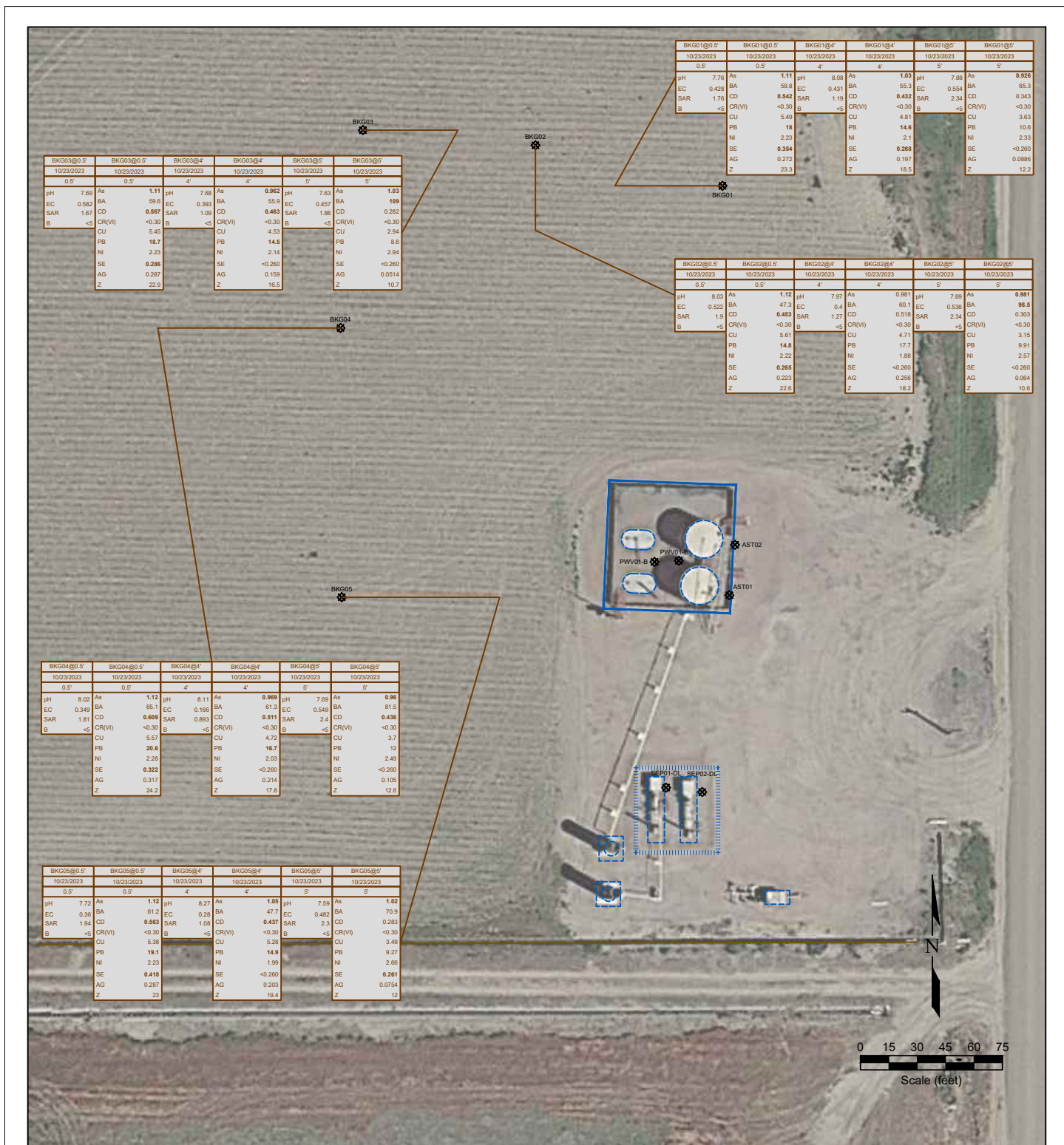
**NOBLE ENERGY INC ~ ARENS 02**

SESE Sec. 22, T4N, R65W, 6th PM

Weld County, Colorado

40.299750°, -104.642230°

Project No.	API #	Facility #
C023-271		322598
Date	Remediation #	Filename
5/22/24	30388	23271Q



LEGEND		FORMER FLOWLINE	
	SOIL SAMPLE LOCATION		ABOVE GROUND STORAGE TANK
	FORMER FACILITY		FORMER FLOWLINE
	FORMER FACILITY		FENCE LINE
	CONTAINMENT BERM		CONTAINMENT WALL
	NOT ANALYZED		

SAMPLE ID	DATE	SAMPLE ID	DATE	SAMPLE ID	DATE
ACE	10/23/2023	ACE	10/23/2023	ACE	10/23/2023
As	0.0000	As	0.0000	As	0.0000
Ba	0.0000	Ba	0.0000	Ba	0.0000
CD	0.0000	CD	0.0000	CD	0.0000
Cr	0.0000	Cr	0.0000	Cr	0.0000
CU	0.0000	CU	0.0000	CU	0.0000
NI	0.0000	NI	0.0000	NI	0.0000
PB	0.0000	PB	0.0000	PB	0.0000
SE	0.0000	SE	0.0000	SE	0.0000
AG	0.0000	AG	0.0000	AG	0.0000
Z	0.0000	Z	0.0000	Z	0.0000

SAMPLE ID	DATE	SAMPLE ID	DATE	SAMPLE ID	DATE
ACE	10/23/2023	ACE	10/23/2023	ACE	10/23/2023
As	0.0000	As	0.0000	As	0.0000
Ba	0.0000	Ba	0.0000	Ba	0.0000
CD	0.0000	CD	0.0000	CD	0.0000
Cr	0.0000	Cr	0.0000	Cr	0.0000
CU	0.0000	CU	0.0000	CU	0.0000
NI	0.0000	NI	0.0000	NI	0.0000
PB	0.0000	PB	0.0000	PB	0.0000
SE	0.0000	SE	0.0000	SE	0.0000
AG	0.0000	AG	0.0000	AG	0.0000
Z	0.0000	Z	0.0000	Z	0.0000

Project No. <b>C023-271</b>		API #	Facility # <b>322598</b>	
Date <b>5/22/24</b>	Remediation # <b>30388</b>	Filename <b>23271Q</b>		





**Description:**

#1 Arens G22-22D Facility: Meter House and Site Sign



## Photo Log



***Description:***

#2 Arens G22-22D Facility: Separator 01 Flowline Riser

## Photo Log



***Description:***

#3 Arens G22-22D Facility: AST 01 and AST02





***Description:***

#4 Arens G22-22D Facility: Separator 02 Flowline Riser



## Photo Log



**Description:**

#5 Arens G22-22D Facility: PWV Excavation





***Description:***

#6 Arens G22-22D Facility: PWV Excavation





***Description:***

#7 Arens G22-22D Facility: PWV Excavation



## Photo Log



**Description:**

#8 Arens G22-22D Facility: Separator Dump Lines





**Description:**

#9 Arens G22-22D Facility: Flares





***Description:***

#10 Arens G22-22D Facility: Flares

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 06, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

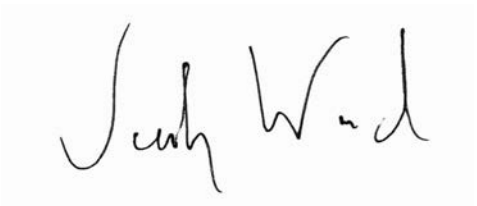
Wellington, CO 80549

RE: Noble - Grant Arens 02 Facility

Work Order #2310444

Enclosed are the results of analyses for samples received by Summit Scientific on 10/23/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jacob Wood". The signature is written in a cursive, flowing style.

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN

Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0.5'	2310444-01	Soil	10/23/23 00:00	10/23/23 16:30
AST02@0.5'	2310444-02	Soil	10/23/23 00:00	10/23/23 16:30
SEP01-DL@4'	2310444-03	Soil	10/23/23 00:00	10/23/23 16:30
SEP02-DL@4'	2310444-04	Soil	10/23/23 00:00	10/23/23 16:30
PWV01-B@5'	2310444-05	Soil	10/23/23 00:00	10/23/23 16:30
PWV01-E@4'	2310444-06	Soil	10/23/23 00:00	10/23/23 16:30
BKG01@0.5'	2310444-07	Soil	10/23/23 00:00	10/23/23 16:30
BKG01@4'	2310444-08	Soil	10/23/23 00:00	10/23/23 16:30
BKG01@5'	2310444-09	Soil	10/23/23 00:00	10/23/23 16:30
BKG02@0.5'	2310444-10	Soil	10/23/23 00:00	10/23/23 16:30
BKG02@4'	2310444-11	Soil	10/23/23 00:00	10/23/23 16:30
BKG02@5'	2310444-12	Soil	10/23/23 00:00	10/23/23 16:30
BKG03@0.5'	2310444-13	Soil	10/23/23 00:00	10/23/23 16:30
BKG03@4'	2310444-14	Soil	10/23/23 00:00	10/23/23 16:30
BKG03@5'	2310444-15	Soil	10/23/23 00:00	10/23/23 16:30
BKG04@0.5'	2310444-16	Soil	10/23/23 00:00	10/23/23 16:30
BKG04@4'	2310444-17	Soil	10/23/23 00:00	10/23/23 16:30
BKG04@5'	2310444-18	Soil	10/23/23 00:00	10/23/23 16:30
BKG05@0.5'	2310444-19	Soil	10/23/23 00:00	10/23/23 16:30
BKG05@4'	2310444-20	Soil	10/23/23 00:00	10/23/23 16:30
BKG05@5'	2310444-21	Soil	10/23/23 00:00	10/23/23 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.*



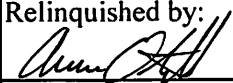
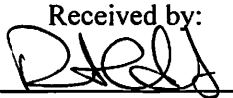
# SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 2
231044.1	

Client: Fremont Environmental		Send Data To: Project Manager: Paul Henehan		Send Invoice To: Company: Noble/Chevron	
Address: 8305 6th Street		E-Mail: Fremont Distribution List		Project Name/Location: Grant Avers O2 Facility	
City/State/Zip: Wellington, CO, 80549				AFE#: UWRWE- A2090-ABN	
Phone: 603-477-6907		Project Name: Grant Avers O2 Facility		PO/Billing Codes:	
Sampler Name: Aaron Otilar		Project Number:		Contact: Mike Montoya	

				Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 915	TPH (C6-C36)	PAH	SAR, EC, pH, Boron	Metals (915-1)	TDS, Cl, SO4	TMB's - 915		
1	ASTO1@0.5'	10/23/23		2			X			X			X	X	X	X	X		X		
2	ASTO2@0.5'																				
3	SEP01-DLE4'																				
4	SEP02-DLE4'																				
5	PW01-B@5'																				
6	PW02@4'																				
7	BK01@0.5'			1													X	X			
8	BK01@4'																				
9	BK01@5'																				
10	BK02@0.5'																				
11	BK02@4'																				
12	BK02@5'																				
13	BK03@0.5'																				
14	BK03@4'																				
15	BK03@5'																				

Relinquished by: 	Date/Time: 10/23/23 1615	Received by: Summit North Office	Date/Time: 10/23/23 1615	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: SZ	Date/Time: 10/23/23 1630	Received by: 	Date/Time: 10/23/23 1630	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 19.1	Corrected Temperature 0	IR gun #: 1	HNO3 lot #:			

# SUMMIT SCIENTIFIC

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

Lab ID	Page <u>2</u> of <u>2</u>
2310444.2	

Client: Fremont Environmental		Send Data To: Project Manager: Paul Henehan		Send Invoice To: Company: <u>Noble / Chevron</u>	
Address: 8305 6th Street		E-Mail: Fremont Distribution List		Project Name/Location: <u>Grant Acres 02 Facility</u>	
City/State/Zip: Wellington, CO, 80549				AFE#: <u>UWRWE-A2090-ABN</u>	
Phone: 603-477-6907		Project Name: <u>Grant Acres 02 Facility</u>		PO/Billing Codes:	
Sampler Name: Aaron Otilar		Project Number:		Contact: <u>Mike Montoya</u>	

				Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 915	TPH (C6-C36)	PAH	SAR, EC, pH, Boron	Metals (915-1)	TDS, Cl, SO4	TMB's - 915	HOLD	
1	BK6040.5'	10/23/23		1			X			X						X	X				
2	BK6040.4'			1																	
3	BK6040.5'			1																	
4	BK6050.5'			1																	
5	BK6050.4'			1																	
6	BK6050.5'			1																	
7	PW601-Ney.			2																X	
8	PW601-SE4'			1																	
9	PW601-Wey'			1																	
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	TAT Business Days	Field DO	Notes:
<u>Aaron Otilar</u>	10/23/23 1615	<u>Summit North Office</u>	10/23/23 1615	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
<u>SL</u>	10/23/23 1630	<u>[Signature]</u>	10/23/23 1630	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: <u>19.1</u>		Corrected Temperature <u>9</u>		IR gun #: <u>1</u>	HNO3 lot #: _____	

S<sub>2</sub>

2/2

## Sample Receipt Checklist

S2 Work Order# 2310444Client: FremontClient Project ID: Grant Arens 02 FacilityShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #:

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☐

Other

☐

Temp (°C)

19.1

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> 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"/>	<u>at 20°C</u>
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>no time stamps</u>
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

10/23/23  
Date/Time



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**AST01@0.5'**  
**2310444-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BGJ0948	10/24/23	10/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0416	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0381	95.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0370	92.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	13.8	110 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**AST01@0.5'**  
**2310444-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/24/23	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: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0248	74.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0237	71.1 %	40-150		"	"	"	"	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**AST01@0.5'**  
**2310444-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.667	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	7.03	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	15.4	0.400	"	"	"	"	"	"
Lead	1.68	0.200	"	"	"	"	"	"
Nickel	5.62	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	2.74	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5.36	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/01/23	EPA 6020B	
Magnesium	1.72	0.0500	"	"	"	"	"	"	
Sodium	2.46	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.237	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Summit Scientific

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



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**AST01@0.5'**  
**2310444-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.6		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0251	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.73		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

Summit Scientific

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



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**AST02@0.5'**  
**2310444-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ0948	10/24/23	10/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0446	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0381	95.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0366	91.6 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.4	99.4 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**AST02@0.5'**  
**2310444-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/24/23	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: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0249	74.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0230	69.0 %	40-150		"	"	"	"	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

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 - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**AST02@0.5'**  
**2310444-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.334	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	5.43	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	0.523	0.400	"	"	"	"	"	"
Lead	1.27	0.200	"	"	"	"	"	"
Nickel	ND	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	2.18	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2.87	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/01/23	EPA 6020B	
Magnesium	0.690	0.0500	"	"	"	"	"	"	
Sodium	0.646	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0889	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**AST02@0.5'**  
**2310444-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.4		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0117	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	5.91		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**SEP01-DL@4'**  
**2310444-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ0948	10/24/23	10/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0455	114 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	96.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0378	94.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.84	62.7 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**SEP01-DL@4'**  
**2310444-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/24/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Benzo (a) pyrene</b>	<b>0.00793</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (b) fluoranthene</b>	<b>0.00576</b>	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.00667</b>	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.00791</b>	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0240	72.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0216	64.9 %	40-150		"	"	"	"	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**SEP01-DL@4'**  
**2310444-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.30	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	69.5	0.400	"	"	"	"	"	"
Cadmium	0.594	0.200	"	"	"	"	"	"
Copper	6.29	0.400	"	"	"	"	"	"
Lead	21.6	0.200	"	"	"	"	"	"
Nickel	2.27	0.400	"	"	"	"	"	"
Silver	0.308	0.0200	"	"	"	"	"	"
Zinc	31.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	233	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/01/23	EPA 6020B	
Magnesium	31.2	0.0500	"	"	"	"	"	"	
Sodium	4.55	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0743	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**SEP01-DL@4'**  
**2310444-03 (Soil)**

**Summit Scientific**

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

% Solids	85.9	%	1	BGJ1203	10/30/23	10/31/23	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.178	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.02		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**SEP02-DL@4'**  
**2310444-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ0948	10/24/23	10/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0328	81.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0342	85.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.3	90.5 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**SEP02-DL@4'**  
**2310444-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/24/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Benzo (a) pyrene</b>	<b>0.00808</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (b) fluoranthene</b>	<b>0.00529</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (k) fluoranthene</b>	<b>0.00506</b>	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.00720</b>	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0106</b>	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0156	46.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0153	45.9 %	40-150		"	"	"	"	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**SEP02-DL@4'**  
**2310444-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.08	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	62.0	0.400	"	"	"	"	"	"
Cadmium	0.524	0.200	"	"	"	"	"	"
Copper	5.07	0.400	"	"	"	"	"	"
Lead	16.3	0.200	"	"	"	"	"	"
Nickel	2.00	0.400	"	"	"	"	"	"
Silver	0.198	0.0200	"	"	"	"	"	"
Zinc	20.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	196	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/01/23	EPA 6020B	
Magnesium	29.6	0.0500	"	"	"	"	"	"	
Sodium	1.83	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0322	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

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 - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**SEP02-DL@4'**  
**2310444-04 (Soil)**

**Summit Scientific**

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

% Solids	90.1	%	1	BGJ1203	10/30/23	10/31/23	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.133	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**PWV01-B@5'**  
**2310444-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ0948	10/24/23	10/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0434	109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0375	93.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0369	92.2 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.44	75.5 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**PWV01-B@5'**  
**2310444-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/24/23	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: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0136	40.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0141	42.2 %	40-150		"	"	"	"	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**PWV01-B@5'**  
**2310444-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.69	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	102	0.400	"	"	"	"	"	"
Cadmium	0.260	0.200	"	"	"	"	"	"
Copper	2.44	0.400	"	"	"	"	"	"
Lead	6.55	0.200	"	"	"	"	"	"
Nickel	2.82	0.400	"	"	"	"	"	"
Silver	0.0323	0.0200	"	"	"	"	"	"
Zinc	10.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	841	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	44.4	0.0500	"	"	"	"	"	"	
Sodium	30.8	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.281	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**PWV01-B@5'**  
**2310444-05 (Soil)**

**Summit Scientific**

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

% Solids	82.9	%	1	BGJ1203	10/30/23	10/31/23	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.268	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.61		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**PWV01-E@4'**  
**2310444-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ0948	10/24/23	10/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0449	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0361	90.2 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.02	72.2 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**PWV01-E@4'**  
**2310444-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Benzo (a) anthracene</b>	<b>0.00744</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (a) pyrene</b>	<b>0.0126</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (b) fluoranthene</b>	<b>0.0123</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (k) fluoranthene</b>	<b>0.00746</b>	0.00500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.00894</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.0122</b>	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
<b>Indeno (1,2,3-cd) pyrene</b>	<b>0.00671</b>	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0189</b>	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0165	49.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0153	46.0 %	40-150		"	"	"	"	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

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

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**PWV01-E@4'**  
**2310444-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.54	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	67.7	0.400	"	"	"	"	"	"
Cadmium	0.618	0.200	"	"	"	"	"	"
Copper	6.87	0.400	"	"	"	"	"	"
Lead	31.8	0.200	"	"	"	"	"	"
Nickel	2.42	0.400	"	"	"	"	"	"
Silver	0.322	0.0200	"	"	"	"	"	"
Zinc	58.5	0.400	"	"	"	"	"	"
Selenium	0.286	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	98.9	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	19.3	0.0500	"	"	"	"	"	"	
Sodium	3.29	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0792	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**PWV01-E@4'**  
**2310444-06 (Soil)**

**Summit Scientific**

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

% Solids	86.9	%	1	BGJ1203	10/30/23	10/31/23	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.130	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.67		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG01@0.5'**  
**2310444-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	1.11	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	59.8	0.400	"	"	"	"	"	"	
Cadmium	0.542	0.200	"	"	"	"	"	"	
Copper	5.49	0.400	"	"	"	"	"	"	
Lead	18.0	0.200	"	"	"	"	"	"	
Nickel	2.23	0.400	"	"	"	"	"	"	
Silver	0.272	0.0200	"	"	"	"	"	"	
Zinc	23.3	0.400	"	"	"	"	"	"	
Selenium	0.354	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	42.8	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	10.0	0.0500	"	"	"	"	"	"	
Sodium	49.2	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Summit Scientific

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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG01@0.5'**  
**2310444-07 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.76	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.428	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.76		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG01@4'**  
**2310444-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.03	0.200		mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	55.3	0.400		"	"	"	"	"	"	
Cadmium	0.432	0.200		"	"	"	"	"	"	
Copper	4.81	0.400		"	"	"	"	"	"	
Lead	14.6	0.200		"	"	"	"	"	"	
Nickel	2.10	0.400		"	"	"	"	"	"	
Silver	0.197	0.0200		"	"	"	"	"	"	
Zinc	18.5	0.400		"	"	"	"	"	"	
Selenium	0.268	0.260		"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	118	0.0500		mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	23.8	0.0500		"	"	"	"	"	"	
Sodium	54.1	0.0500		"	"	"	"	"	"	

**Calculated Analysis**

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG01@4'**  
**2310444-08 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.19	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.7		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.431	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG01@5'**  
**2310444-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	<b>0.926</b>	0.200		mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	<b>65.3</b>	0.400		"	"	"	"	"	"	
Cadmium	<b>0.343</b>	0.200		"	"	"	"	"	"	
Copper	<b>3.63</b>	0.400		"	"	"	"	"	"	
Lead	<b>10.6</b>	0.200		"	"	"	"	"	"	
Nickel	<b>2.33</b>	0.400		"	"	"	"	"	"	
Silver	<b>0.0886</b>	0.0200		"	"	"	"	"	"	
Zinc	<b>12.2</b>	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	<b>43.1</b>	0.0500		mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	<b>12.4</b>	0.0500		"	"	"	"	"	"	
Sodium	<b>67.6</b>	0.0500		"	"	"	"	"	"	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG01@5'**  
**2310444-09 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.34	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.7		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.554	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.88		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG02@0.5'**  
**2310444-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	1.12	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	47.3	0.400	"	"	"	"	"	"	
Cadmium	0.453	0.200	"	"	"	"	"	"	
Copper	5.61	0.400	"	"	"	"	"	"	
Lead	14.8	0.200	"	"	"	"	"	"	
Nickel	2.22	0.400	"	"	"	"	"	"	
Silver	0.223	0.0200	"	"	"	"	"	"	
Zinc	22.6	0.400	"	"	"	"	"	"	
Selenium	0.265	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	56.7	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	13.4	0.0500	"	"	"	"	"	"	
Sodium	61.4	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

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**Reported:**  
11/06/23 09:05

**BKG02@0.5'**  
**2310444-10 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.90	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.4		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.522	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG02@4'**  
**2310444-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	<b>0.981</b>	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	<b>60.1</b>	0.400	"	"	"	"	"	"	
Cadmium	<b>0.518</b>	0.200	"	"	"	"	"	"	
Copper	<b>4.71</b>	0.400	"	"	"	"	"	"	
Lead	<b>17.7</b>	0.200	"	"	"	"	"	"	
Nickel	<b>1.88</b>	0.400	"	"	"	"	"	"	
Silver	<b>0.256</b>	0.0200	"	"	"	"	"	"	
Zinc	<b>18.2</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	<b>74.7</b>	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	<b>15.2</b>	0.0500	"	"	"	"	"	"	
Sodium	<b>46.0</b>	0.0500	"	"	"	"	"	"	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG02@4'**  
**2310444-11 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.27	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.1		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.400	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG02@5'**  
**2310444-12 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	<b>0.981</b>	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	<b>98.5</b>	0.400	"	"	"	"	"	"	
Cadmium	<b>0.303</b>	0.200	"	"	"	"	"	"	
Copper	<b>3.15</b>	0.400	"	"	"	"	"	"	
Lead	<b>9.91</b>	0.200	"	"	"	"	"	"	
Nickel	<b>2.57</b>	0.400	"	"	"	"	"	"	
Silver	<b>0.0640</b>	0.0200	"	"	"	"	"	"	
Zinc	<b>10.6</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	<b>36.1</b>	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	<b>10.7</b>	0.0500	"	"	"	"	"	"	
Sodium	<b>62.2</b>	0.0500	"	"	"	"	"	"	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG02@5'**  
**2310444-12 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.34	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.0		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.536	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.69		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG03@0.5'**  
**2310444-13 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.11	0.200		mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	59.6	0.400		"	"	"	"	"	"	
Cadmium	0.567	0.200		"	"	"	"	"	"	
Copper	5.45	0.400		"	"	"	"	"	"	
Lead	18.7	0.200		"	"	"	"	"	"	
Nickel	2.23	0.400		"	"	"	"	"	"	
Silver	0.287	0.0200		"	"	"	"	"	"	
Zinc	22.9	0.400		"	"	"	"	"	"	
Selenium	0.286	0.260		"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	86.6	0.0500		mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	20.1	0.0500		"	"	"	"	"	"	
Sodium	66.4	0.0500		"	"	"	"	"	"	

**Calculated Analysis**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG03@0.5'**  
**2310444-13 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.67	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.0		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.582	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.69		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG03@4'**  
**2310444-14 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	<b>0.962</b>	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	<b>55.9</b>	0.400	"	"	"	"	"	"	
Cadmium	<b>0.463</b>	0.200	"	"	"	"	"	"	
Copper	<b>4.53</b>	0.400	"	"	"	"	"	"	
Lead	<b>14.5</b>	0.200	"	"	"	"	"	"	
Nickel	<b>2.14</b>	0.400	"	"	"	"	"	"	
Silver	<b>0.159</b>	0.0200	"	"	"	"	"	"	
Zinc	<b>16.5</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	<b>116</b>	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	<b>24.9</b>	0.0500	"	"	"	"	"	"	
Sodium	<b>49.7</b>	0.0500	"	"	"	"	"	"	

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Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG03@4'**  
**2310444-14 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.09	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.4		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.393	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.68		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility  
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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG03@5'**  
**2310444-15 (Soil)**

### Summit Scientific

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	1.03	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	109	0.400	"	"	"	"	"	"	
Cadmium	0.282	0.200	"	"	"	"	"	"	
Copper	2.94	0.400	"	"	"	"	"	"	
Lead	8.60	0.200	"	"	"	"	"	"	
Nickel	2.94	0.400	"	"	"	"	"	"	
Silver	0.0514	0.0200	"	"	"	"	"	"	
Zinc	10.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

#### Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	54.3	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	17.6	0.0500	"	"	"	"	"	"	
Sodium	61.7	0.0500	"	"	"	"	"	"	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG03@5'**  
**2310444-15 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.86	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.457	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.63		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG04@0.5'**  
**2310444-16 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.12	0.200		mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	65.1	0.400		"	"	"	"	"	"	
Cadmium	0.609	0.200		"	"	"	"	"	"	
Copper	5.57	0.400		"	"	"	"	"	"	
Lead	20.6	0.200		"	"	"	"	"	"	
Nickel	2.28	0.400		"	"	"	"	"	"	
Silver	0.317	0.0200		"	"	"	"	"	"	
Zinc	24.2	0.400		"	"	"	"	"	"	
Selenium	0.322	0.260		"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	24.1	0.0500		mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	8.17	0.0500		"	"	"	"	"	"	
Sodium	40.3	0.0500		"	"	"	"	"	"	

**Calculated Analysis**

Summit Scientific

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG04@0.5'**  
**2310444-16 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.81	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.4		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.349	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.02		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG04@4'**  
**2310444-17 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	<b>0.969</b>	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	<b>61.3</b>	0.400	"	"	"	"	"	"	
Cadmium	<b>0.511</b>	0.200	"	"	"	"	"	"	
Copper	<b>4.72</b>	0.400	"	"	"	"	"	"	
Lead	<b>16.7</b>	0.200	"	"	"	"	"	"	
Nickel	<b>2.03</b>	0.400	"	"	"	"	"	"	
Silver	<b>0.214</b>	0.0200	"	"	"	"	"	"	
Zinc	<b>17.8</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	<b>36.1</b>	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	<b>8.07</b>	0.0500	"	"	"	"	"	"	
Sodium	<b>22.8</b>	0.0500	"	"	"	"	"	"	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG04@4'**  
**2310444-17 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.893	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.5		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.166	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.11		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG04@5'**  
**2310444-18 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	<b>0.960</b>	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	<b>81.5</b>	0.400	"	"	"	"	"	"	
Cadmium	<b>0.436</b>	0.200	"	"	"	"	"	"	
Copper	<b>3.70</b>	0.400	"	"	"	"	"	"	
Lead	<b>12.0</b>	0.200	"	"	"	"	"	"	
Nickel	<b>2.49</b>	0.400	"	"	"	"	"	"	
Silver	<b>0.105</b>	0.0200	"	"	"	"	"	"	
Zinc	<b>12.6</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	<b>31.7</b>	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	<b>12.2</b>	0.0500	"	"	"	"	"	"	
Sodium	<b>62.7</b>	0.0500	"	"	"	"	"	"	

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Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG04@5'**  
**2310444-18 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.40	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.4		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.549	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.69		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG05@0.5'**  
**2310444-19 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	1.12	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	61.2	0.400	"	"	"	"	"	"	
Cadmium	0.563	0.200	"	"	"	"	"	"	
Copper	5.38	0.400	"	"	"	"	"	"	
Lead	19.1	0.200	"	"	"	"	"	"	
Nickel	2.23	0.400	"	"	"	"	"	"	
Silver	0.287	0.0200	"	"	"	"	"	"	
Zinc	23.0	0.400	"	"	"	"	"	"	
Selenium	0.418	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	23.8	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	7.92	0.0500	"	"	"	"	"	"	
Sodium	42.8	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Summit Scientific

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG05@0.5'**  
**2310444-19 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.94	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.360	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.72		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG05@4'**  
**2310444-20 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	1.05	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	47.7	0.400	"	"	"	"	"	"	
Cadmium	0.437	0.200	"	"	"	"	"	"	
Copper	5.28	0.400	"	"	"	"	"	"	
Lead	14.9	0.200	"	"	"	"	"	"	
Nickel	1.99	0.400	"	"	"	"	"	"	
Silver	0.203	0.0200	"	"	"	"	"	"	
Zinc	19.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	26.4	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	8.99	0.0500	"	"	"	"	"	"	
Sodium	25.2	0.0500	"	"	"	"	"	"	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG05@4'**  
**2310444-20 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.08	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.5		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.280	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.27		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG05@5'**  
**2310444-21 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.02	0.200		mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	70.9	0.400		"	"	"	"	"	"	
Cadmium	0.283	0.200		"	"	"	"	"	"	
Copper	3.49	0.400		"	"	"	"	"	"	
Lead	9.27	0.200		"	"	"	"	"	"	
Nickel	2.66	0.400		"	"	"	"	"	"	
Silver	0.0754	0.0200		"	"	"	"	"	"	
Zinc	12.0	0.400		"	"	"	"	"	"	
Selenium	0.261	0.260		"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	26.5	0.0500		mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	10.5	0.0500		"	"	"	"	"	"	
Sodium	55.2	0.0500		"	"	"	"	"	"	

**Calculated Analysis**

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**BKG05@5'**  
**2310444-21 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.30	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.6		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.482	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.59		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

## 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 BGJ0948 - EPA 5030 Soil MS

##### Blank (BGJ0948-BLK1)

Prepared: 10/24/23 Analyzed: 10/25/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0434		"	0.0400		108	50-150			
Surrogate: Toluene-d8	0.0373		"	0.0400		93.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.7	50-150			

##### LCS (BGJ0948-BS1)

Prepared: 10/24/23 Analyzed: 10/25/23

Benzene	0.113	0.0020	mg/kg	0.100		113	70-130			
Toluene	0.0929	0.0050	"	0.100		92.9	70-130			
Ethylbenzene	0.0997	0.0050	"	0.100		99.7	70-130			
m,p-Xylene	0.194	0.010	"	0.200		97.0	70-130			
o-Xylene	0.0960	0.0050	"	0.100		96.0	70-130			
1,2,4-Trimethylbenzene	0.0988	0.0050	"	0.100		98.8	70-130			
1,3,5-Trimethylbenzene	0.0982	0.0050	"	0.100		98.2	70-130			
Naphthalene	0.0806	0.0038	"	0.100		80.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0447		"	0.0400		112	50-150			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.3	50-150			

##### Matrix Spike (BGJ0948-MS1)

Source: 2310439-01

Prepared: 10/24/23 Analyzed: 10/25/23

Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130			
Toluene	0.0836	0.0050	"	0.100	ND	83.6	70-130			
Ethylbenzene	0.0842	0.0050	"	0.100	ND	84.2	70-130			
m,p-Xylene	0.163	0.010	"	0.200	ND	81.3	70-130			
o-Xylene	0.0790	0.0050	"	0.100	ND	79.0	70-130			
1,2,4-Trimethylbenzene	0.0755	0.0050	"	0.100	ND	75.5	70-130			
1,3,5-Trimethylbenzene	0.0750	0.0050	"	0.100	ND	75.0	70-130			
Naphthalene	0.0731	0.0038	"	0.100	ND	73.1	70-130			QLCS-03
Surrogate: 1,2-Dichloroethane-d4	0.0464		"	0.0400		116	50-150			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		95.9	50-150			

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Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

**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 BGJ0948 - EPA 5030 Soil MS**

Matrix Spike Dup (BGJ0948-MSD1)		Source: 2310439-01			Prepared: 10/24/23 Analyzed: 10/25/23					
Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130	0.664	30	
Toluene	0.0863	0.0050	"	0.100	ND	86.3	70-130	3.14	30	
Ethylbenzene	0.0843	0.0050	"	0.100	ND	84.3	70-130	0.107	30	
m,p-Xylene	0.162	0.010	"	0.200	ND	81.0	70-130	0.333	30	
o-Xylene	0.0802	0.0050	"	0.100	ND	80.2	70-130	1.58	30	
1,2,4-Trimethylbenzene	0.0755	0.0050	"	0.100	ND	75.5	70-130	0.0795	30	
1,3,5-Trimethylbenzene	0.0760	0.0050	"	0.100	ND	76.0	70-130	1.31	30	
Naphthalene	0.0705	0.0038	"	0.100	ND	70.5	70-130	3.59	30	QLCS-03
Surrogate: 1,2-Dichloroethane-d4	0.0478		"	0.0400		119	50-150			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.6	50-150			

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Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

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

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

**Batch BGJ0953 - EPA 3550A**

**Blank (BGJ0953-BLK1)**

Prepared & Analyzed: 10/24/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.3		"	12.5		115	30-150			

**LCS (BGJ0953-BS1)**

Prepared & Analyzed: 10/24/23

C10-C28 (DRO)	404	50	mg/kg	500		80.7	70-130			
Surrogate: o-Terphenyl	15.5		"	12.5		124	30-150			

**Matrix Spike (BGJ0953-MS1)**

Source: 2310439-01

Prepared & Analyzed: 10/24/23

C10-C28 (DRO)	457	50	mg/kg	500	16.3	88.1	70-130			
Surrogate: o-Terphenyl	11.1		"	12.5		88.9	30-150			

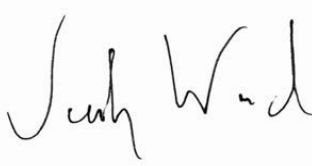
**Matrix Spike Dup (BGJ0953-MSD1)**

Source: 2310439-01

Prepared & Analyzed: 10/24/23

C10-C28 (DRO)	453	50	mg/kg	500	16.3	87.4	70-130	0.768	20	
Surrogate: o-Terphenyl	11.1		"	12.5		89.1	30-150			

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Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

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

### Summit Scientific

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

#### Batch BGJ0925 - EPA 5030 Soil MS

##### Blank (BGJ0925-BLK1)

Prepared & Analyzed: 10/24/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0329		"	0.0333		98.8	40-150			
Surrogate: Fluoranthene-d10	0.0326		"	0.0333		97.7	40-150			

##### LCS (BGJ0925-BS1)

Prepared & Analyzed: 10/24/23

Acenaphthene	0.0317	0.00500	mg/kg	0.0333		95.2	31-137			
Anthracene	0.0320	0.00500	"	0.0333		96.1	30-120			
Benzo (a) anthracene	0.0254	0.00500	"	0.0333		76.2	30-120			
Benzo (a) pyrene	0.0278	0.00500	"	0.0333		83.5	30-120			
Benzo (b) fluoranthene	0.0271	0.00500	"	0.0333		81.2	30-120			
Benzo (k) fluoranthene	0.0328	0.00500	"	0.0333		98.3	30-120			
Chrysene	0.0319	0.00500	"	0.0333		95.7	30-120			
Dibenz (a,h) anthracene	0.0228	0.00500	"	0.0333		68.5	30-120			
Fluoranthene	0.0305	0.00500	"	0.0333		91.6	30-120			
Fluorene	0.0315	0.00500	"	0.0333		94.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0239	0.00500	"	0.0333		71.8	30-120			
Pyrene	0.0340	0.00500	"	0.0333		102	35-142			
1-Methylnaphthalene	0.0290	0.00500	"	0.0333		87.1	35-142			
2-Methylnaphthalene	0.0321	0.00500	"	0.0333		96.4	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0329		"	0.0333		98.7	40-150			
Surrogate: Fluoranthene-d10	0.0316		"	0.0333		94.7	40-150			

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

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

### Summit Scientific

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

#### Batch BGJ0925 - EPA 5030 Soil MS

##### Matrix Spike (BGJ0925-MS1)

Source: 2310441-01

Prepared & Analyzed: 10/24/23

Acenaphthene	0.0238	0.00500	mg/kg	0.0333	ND	71.5	31-137			
Anthracene	0.0250	0.00500	"	0.0333	ND	75.0	30-120			
Benzo (a) anthracene	0.0230	0.00500	"	0.0333	ND	69.0	30-120			
Benzo (a) pyrene	0.0231	0.00500	"	0.0333	0.00860	43.5	30-120			
Benzo (b) fluoranthene	0.0210	0.00500	"	0.0333	0.00991	33.2	30-120			
Benzo (k) fluoranthene	0.0248	0.00500	"	0.0333	0.00693	53.6	30-120			
Chrysene	0.0252	0.00500	"	0.0333	0.00636	56.4	30-120			
Dibenz (a,h) anthracene	0.0209	0.00500	"	0.0333	ND	62.8	30-120			
Fluoranthene	0.0250	0.00500	"	0.0333	0.00759	52.2	30-120			
Fluorene	0.0245	0.00500	"	0.0333	ND	73.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0207	0.00500	"	0.0333	0.00709	40.9	30-120			
Pyrene	0.0280	0.00500	"	0.0333	0.00919	56.5	35-142			
1-Methylnaphthalene	0.0208	0.00500	"	0.0333	ND	62.3	15-130			
2-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.8	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0212		"	0.0333		63.5	40-150			
Surrogate: Fluoranthene-d10	0.0255		"	0.0333		76.6	40-150			

##### Matrix Spike Dup (BGJ0925-MSD1)

Source: 2310441-01

Prepared & Analyzed: 10/24/23

Acenaphthene	0.0228	0.00500	mg/kg	0.0333	ND	68.5	31-137	4.28	30	
Anthracene	0.0239	0.00500	"	0.0333	ND	71.8	30-120	4.29	30	
Benzo (a) anthracene	0.0217	0.00500	"	0.0333	ND	65.1	30-120	5.76	30	
Benzo (a) pyrene	0.0224	0.00500	"	0.0333	0.00860	41.5	30-120	3.01	30	
Benzo (b) fluoranthene	0.0204	0.00500	"	0.0333	0.00991	31.4	30-120	3.00	30	
Benzo (k) fluoranthene	0.0240	0.00500	"	0.0333	0.00693	51.3	30-120	3.08	30	
Chrysene	0.0238	0.00500	"	0.0333	0.00636	52.4	30-120	5.46	30	
Dibenz (a,h) anthracene	0.0208	0.00500	"	0.0333	ND	62.3	30-120	0.752	30	
Fluoranthene	0.0234	0.00500	"	0.0333	0.00759	47.3	30-120	6.76	30	
Fluorene	0.0233	0.00500	"	0.0333	ND	70.0	30-120	4.73	30	
Indeno (1,2,3-cd) pyrene	0.0209	0.00500	"	0.0333	0.00709	41.4	30-120	0.841	30	
Pyrene	0.0274	0.00500	"	0.0333	0.00919	54.6	35-142	2.23	30	
1-Methylnaphthalene	0.0191	0.00500	"	0.0333	ND	57.2	15-130	8.42	50	
2-Methylnaphthalene	0.0218	0.00500	"	0.0333	ND	65.3	15-130	0.689	50	
Surrogate: 2-Methylnaphthalene-d10	0.0204		"	0.0333		61.2	40-150			
Surrogate: Fluoranthene-d10	0.0241		"	0.0333		72.3	40-150			

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

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

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

**Batch BGJ1211 - EPA 3050B**

**Blank (BGJ1211-BLK1)**

Prepared: 10/30/23 Analyzed: 11/02/23

Boron ND 2.00 mg/L

**LCS (BGJ1211-BS1)**

Prepared: 10/30/23 Analyzed: 11/02/23

Boron 4.81 2.00 mg/L 5.00 96.1 80-120

**Duplicate (BGJ1211-DUP1)**

**Source: 2310444-01**

Prepared: 10/30/23 Analyzed: 11/03/23

Boron 0.0522 2.00 mg/L 0.0641 20.5 20 QR-01

**Matrix Spike (BGJ1211-MS1)**

**Source: 2310444-01**

Prepared: 10/30/23 Analyzed: 11/03/23

Boron 4.66 2.00 mg/L 5.00 0.0641 92.0 75-125

**Matrix Spike Dup (BGJ1211-MSD1)**

**Source: 2310444-01**

Prepared: 10/30/23 Analyzed: 11/03/23

Boron 4.70 2.00 mg/L 5.00 0.0641 92.7 75-125 0.789 25

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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

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

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

**Batch BGJ1174 - EPA 3050B**

**Blank (BGJ1174-BLK1)**

Prepared: 10/30/23 Analyzed: 11/01/23

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 (BGJ1174-BS1)**

Prepared: 10/30/23 Analyzed: 11/01/23

Arsenic	47.5	0.200	mg/kg wet	40.0	119	80-120
Barium	42.9	0.400	"	40.0	107	80-120
Cadmium	2.11	0.200	"	2.00	105	80-120
Copper	46.5	0.400	"	40.0	116	80-120
Lead	20.9	0.200	"	20.0	104	80-120
Nickel	46.8	0.400	"	40.0	117	80-120
Silver	2.04	0.0200	"	2.00	102	80-120
Zinc	46.9	0.400	"	40.0	117	80-120
Selenium	4.20	0.260	"	4.00	105	80-120

**Duplicate (BGJ1174-DUP1)**

Source: 2310444-01

Prepared: 10/30/23 Analyzed: 11/01/23

Arsenic	0.561	0.200	mg/kg dry	0.667	17.2	20	
Barium	5.38	0.400	"	7.03	26.7	20	QR-04
Cadmium	0.0337	0.200	"	0.0373	10.3	20	
Copper	6.76	0.400	"	15.4	77.8	20	QR-04
Lead	1.57	0.200	"	1.68	6.61	20	
Nickel	3.18	0.400	"	5.62	55.5	20	QR-01
Silver	0.0130	0.0200	"	0.0179	31.6	20	QR-01
Zinc	2.43	0.400	"	2.74	11.8	20	
Selenium	ND	0.260	"	ND		20	

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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

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

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

**Batch BGJ1174 - EPA 3050B**

Matrix Spike (BGJ1174-MS1)		Source: 2310444-01			Prepared: 10/30/23 Analyzed: 11/01/23					
Arsenic	24.8	0.200	mg/kg dry	40.6	0.667	59.4	75-125			QM-07
Barium	49.7	0.400	"	40.6	7.03	105	75-125			
Cadmium	2.07	0.200	"	2.03	0.0373	100	75-125			
Copper	30.1	0.400	"	40.6	15.4	36.2	75-125			QM-07
Lead	20.7	0.200	"	20.3	1.68	94.0	75-125			
Nickel	26.1	0.400	"	40.6	5.62	50.4	75-125			QM-07
Silver	1.95	0.0200	"	2.03	0.0179	95.3	75-125			
Zinc	26.5	0.400	"	40.6	2.74	58.6	75-125			QM-07
Selenium	7.22	0.260	"	4.06	ND	178	75-125			QM-07

Matrix Spike Dup (BGJ1174-MSD1)		Source: 2310444-01			Prepared: 10/30/23 Analyzed: 11/01/23					
Arsenic	24.7	0.200	mg/kg dry	40.6	0.667	59.3	75-125	0.162	25	QM-07
Barium	51.1	0.400	"	40.6	7.03	109	75-125	2.82	25	
Cadmium	2.14	0.200	"	2.03	0.0373	104	75-125	3.25	25	
Copper	29.8	0.400	"	40.6	15.4	35.4	75-125	0.993	25	QM-07
Lead	21.2	0.200	"	20.3	1.68	96.4	75-125	2.30	25	
Nickel	25.9	0.400	"	40.6	5.62	50.0	75-125	0.636	25	QM-07
Silver	2.00	0.0200	"	2.03	0.0179	97.8	75-125	2.59	25	
Zinc	26.6	0.400	"	40.6	2.74	58.9	75-125	0.427	25	QM-07
Selenium	6.68	0.260	"	4.06	ND	165	75-125	7.73	25	QM-07

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

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

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

**Batch BGJ0999 - 3060A Mod**

**Blank (BGJ0999-BLK1)**

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGJ0999-BS1)**

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent 25.6 0.30 mg/kg wet 25.0 102 80-120

**Duplicate (BGJ0999-DUP1)**

**Source: 2310444-01**

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGJ0999-MS1)**

**Source: 2310444-01**

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent 25.2 0.30 mg/kg dry 25.4 ND 99.4 75-125

**Matrix Spike Dup (BGJ0999-MSD1)**

**Source: 2310444-01**

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent 25.3 0.30 mg/kg dry 25.4 ND 99.8 75-125 0.402 20

Summit Scientific

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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

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

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

**Batch BGJ1145 - General Preparation**

**Blank (BGJ1145-BLK1)**

Prepared: 10/27/23 Analyzed: 11/01/23

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

**LCS (BGJ1145-BS1)**

Prepared: 10/27/23 Analyzed: 11/01/23

Calcium	5.24	0.0500	mg/L wet	5.00	105	70-130
Magnesium	5.31	0.0500	"	5.00	106	70-130
Sodium	5.60	0.0500	"	5.00	112	70-130

Summit Scientific

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN

Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

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

**Summit Scientific**

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

**Batch BGJ1203 - General Preparation**

**Duplicate (BGJ1203-DUP1)**

**Source: 2310444-01**

Prepared: 10/30/23 Analyzed: 10/31/23

% Solids	98.6	%	98.6	0.0636	20
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Project: Noble - Grant Arens 02 Facility  
Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

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

**Summit Scientific**

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

**Batch BGJ1192 - General Preparation**

**Blank (BGJ1192-BLK1)**

Prepared & Analyzed: 10/30/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGJ1192-BS1)**

Prepared & Analyzed: 10/30/23

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

**Duplicate (BGJ1192-DUP1)**

**Source: 2310444-01**

Prepared & Analyzed: 10/30/23

Specific Conductance (EC) 0.0244 0.0100 mmhos/cm 0.0251 2.87 20

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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN

Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

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

**Summit Scientific**

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

**Batch BGJ1191 - General Preparation**

**LCS (BGJ1191-BS1)**

Prepared & Analyzed: 10/30/23

pH	9.13	pH Units	9.18	99.5	95-105
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**Duplicate (BGJ1191-DUP1)**

Source: 2310444-01

Prepared & Analyzed: 10/30/23

pH	6.57	pH Units	6.73	2.41	20
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Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/06/23 09:05

### 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.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
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.
QLCS-03	The spike recovery was outside acceptance limits for this analyte indicating a potential low bias.
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