

# **FREMONT ENVIRONMENTAL INC.**

August 8, 2023

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

Subject:     **Excavation Report**  
              Wells Ranch AE20 (Flowline)  
              Facility #432663  
              SWNW Sec. 20, T6N, R62W  
              Weld County, Colorado  
              Fremont Project No. C022-037  
              Remediation # 26241

Dear Mr. Peterson:

Enclosed please find a copy of the above referenced Excavation Report for the Wells Ranch AE20 (flowline) facility in Weld County, Colorado. The enclosed report describes excavation and sampling efforts to remediate impacted soil at the site.

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

Fremont appreciates the opportunity to provide this service.

Sincerely,  
**FREMONT ENVIRONMENTAL INC.**



Paul V. Henahan, P.E.  
Senior Consultant

Enclosure

**EXCAVATION REPORT**

**NOBLE ENERGY INC.**

**WELLS RANCH AE20 (FLOWLINE)**

**WELD COUNTY, COLORADO**

**FREMONT PROJECT NO. C022-037**

**FACILITY #432663, SPILL/RELEASE #481958**

**Prepared by:**

**Fremont Environmental Inc.**

**1759 Redwing Lane**

**Broomfield, CO 80020**

**(303) 956-8714**

**August 8, 2023**

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**EXCAVATION REPORT**  
**NOBLE ENERGY INC.**  
**WELLS RANCH AE20 (FLOWLINE)**  
**WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C022-037**  
**FACILITY #432663, SPILL/RELEASE #481958**

**1.0 INTRODUCTION**

The purpose of this document is to present information collected during the excavation of petroleum-impacted soil at the Wells Ranch AE20 facility in Weld County, Colorado. This excavation project began on April 7, 2022 and was completed on April 21, 2022.

**2.0 BACKGROUND INFORMATION**

**2.1 Site Location**

The Wells Ranch AE20 facility is located approximately 12 miles east of Alden, Colorado in Weld County as shown on Figure 1. The site is located in an agricultural area approximately 0.4 miles south of the intersection of County Road 68 and County Road 75. The location is further described as the SW  $\frac{1}{4}$  of the NW  $\frac{1}{4}$  of Section 20, Township 6N, Range 62W.

**2.2 Site History**

The site's excavation area consisted of the active Wells Ranch AE20 facility flowline. Soil impacts were identified at the Well Ranch AE20 facility during routine operations when liquid from a belowground combined-fluids flowline surfaced adjacent to the site's northeastern most separator. The actual release point was located along the flowline approximately five feet deep and 33 feet west of where free product initially surfaced. Removal of 20 bbls of surfaced free phase liquid and impacted soils was conducted immediately following the discovery of the release. Subsequently, an excavation was undertaken to locate the actual release point along the flowline for repairs, to delineate

the horizontal and vertical extent of soil impacts, and to remove these impacts from the Wells Ranch AE20 facility.

### **3.0 FIELD ACTIVITIES**

#### **3.1 Soil Excavation and Sampling**

Remediation efforts consisted of the excavation of petroleum-impacted soil at and adjacent to the Wells Ranch AE20 separator and flowline location. The soil consisted of road base which is underlain by sandy silt extending to a depth of approximately six feet. The sandy silty is underlain by clay extending to at least seven feet below ground surface. The impacted area was divided into three excavations of varying depths and dimensions. Groundwater was not encountered in any of the excavations. A domestic/stock well, which is located approximately 645 feet west of the release, measures groundwater at a depth of 122 feet below ground surface. The excavation extents are shown on Figure 2.

The multi-day excavation was completed at the Wells Ranch AE20 facility on April 21, 2022. Soil samples collected from the excavations sidewalls and floors were collected as grab samples. Depths of samples collected from the excavations were between two and seven feet below ground surface. Based on laboratory analyses, further excavation was completed beyond the initial excavation to satisfy the ECMC Table 915-1 limits.

The soil samples were analyzed by Origins Laboratory, Inc in Denver, CO and Summit Scientific, Inc. in Golden, Colorado for benzene, toluene, ethylbenzene and total xylenes (BTEX), naphthalene, Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH-GRO) by EPA method 8260B, TPH – Diesel Range Organics (TPH-DRO), Extended Range Organics (TPH-ORO) by EPA method 8015, Polycyclic Aromatic Hydrocarbons (PAH): Acenaphthene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Chrysene, Dibenzo (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-

cd) pyrene, Pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene by EPA method 8270D, Specific Conductance (EC) by EPA Method 120.1 saturated paste extraction, saturated paste extraction of soluble nutrients by EPA method 6020/USDA60 6(2) for calculated analysis of Sodium Absorption Ratio (SAR), pH by saturated paste extraction APHA/ASTM/EPA methods, Total Metals by EPA method 6020B, and Hexavalent Chromium by EPA method 7196.

A summary of the laboratory data for the samples is included in Tables 1 through 5. The laboratory analyses indicated that organic petroleum constituents in soil samples collected from the final-exterior sidewalls and the floor of the excavation achieved the ECMC Table 915-1 residential soil screening levels (RSSLs). However, pH, EC, SAR and arsenic exceeded the ECMC Table 915-1 standards. Using the RSSLs at this site is appropriate due to the anticipated depth to groundwater (~120 feet) and the clay layer at the bottom of the excavation.

A total of approximately 415 cubic yards of petroleum impacted soil was removed via excavation by 1888 Industrial Services Inc. from the facility. Impacted soil was disposed of at Buffalo Ridge Landfill in Keenesburg, Colorado as non-hazardous waste. Initially surfaced free product and soil totaling approximately 120 cubic yards was removed from the impacted area via hydro-vac and transported to Republic Waste Services in Commerce City, Colorado.

To further investigate arsenic levels, background samples were collected at depths of one foot and six feet in the native soil adjacent to the Wells Ranch AE20 site; these samples also exceeded the ECMC Table 915-1 standards for arsenic. Although these background arsenic concentrations were elevated, they were not high enough to resolve the arsenic concentrations noted on the sidewalls and floor of the excavation. Therefore, additional

confirmation was sought to determine if elevated arsenic concentrations were typical of native soil conditions or if the arsenic concentrations present in the liquids released from the flowline could have caused the elevated metal concentrations in soils across the site.

Liquid samples were collected from each of the oil and water dump lines from the separator tied to the failed flowline; these samples were analyzed by Summit Scientific in Golden, Colorado and Pace Analytical National in Mount Juliet, Tennessee for arsenic by EPA Method 200.8 Metals and (ICP) Method 6010B. The laboratory reports and chain-of-custody documentation are included in Appendix B.

Using the arsenic concentrations in each of the two liquid samples, a summary comparing the mass of arsenic in the fluids released to the mass of arsenic removed during excavation was calculated and is included in Table 1. The laboratory data indicate that the mass of arsenic released as a result of the spill was 1.04 grams, while the mass of arsenic removed via excavation was 3,806.96 grams. Therefore, the mass of arsenic removed via excavation was approximately 3,660 times greater than the mass of arsenic released demonstrating that the concentration of arsenic in the liquids released had insufficient mass to account for the elevated levels of arsenic observed both in the excavation and background samples. Therefore, it is proposed that the elevated levels of arsenic be attributed to native soil conditions.

Elevated pH, SAR and/or EC concentrations were observed in six of the excavation soil samples. The pH concentration was also elevated in one of the background samples though SAR and EC concentrations were less than the ECMC Table 915-1 standards.

Since this is an operating facility, remediation of pH, SAR and EC impacts to achieve the Soil Suitability for Reclamation standards is premature. During decommissioning of this

facility at some point in the future, the overlying roadbase and soil will be removed. At that time, application of the Soil Suitability for Reclamation standards will be appropriate and Noble will reclaim the site to the relevant standards in place for revegetation. It is further noted that the observed SAR and EC impacts are thought to be deeper than the anticipated root zone for rangeland vegetative species. Therefore, Noble proposes to allow the soil impacts that currently exceed the Soil Suitability for Reclamation standards to remain in place for now.

#### **4.0 DISCUSSION**

As demonstrated by the soil sampling, petroleum impacted soil was removed from the Wells Ranch AE20 facility by excavation. This was confirmed by the analyses of the soil samples collected from the final exterior sidewalls and floors, which were below the COGCC Table 915-1 standards for petroleum constituents upon completion of the excavation. Approximately 535 cubic yards of impacted soil was removed and transported to the landfill. The soil data are illustrated and summarized in the attached tables and figures.

Although arsenic was present on the periphery of the excavation, analyses of the produced water and oil indicates that those arsenic concentrations are due to native conditions. SAR, EC and pH were also elevated in the excavation; Noble proposes that those constituents be left in place until the facility is decommissioned and will be addressed by a Reclamation Plan at that time.

Therefore, Noble is requesting a no further action determination be provided based on the ECMC Table 915-1 RSSLs due to the confining nature of the soils observed in the floor of the excavation (clay) and the depth to groundwater in a nearby domestic/stock well measuring 120 feet below ground surface.



### **5.0 REMARKS**

The discussion and conclusions contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

This report was prepared by **FREMONT ENVIRONMENTAL INC.**



8/8/23

Date\_\_\_\_\_

\_\_\_\_\_  
Ethan D. Black, P.G.

Geologist

Reviewed by:



8/8/23

Date\_\_\_\_\_

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Paul V. Henahan, P.E.

Senior Consultant

## **TABLES**

**TABLE 1**  
**SUMMARY OF ARSENIC (As) CONCENTRATION IN EXCAVATED SOILS CALCULATION (BASED ON REPORTED SPILL VOLUME)**  
**NOBLE ENERGY INC.**  
**WELLS RANCH AE20, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C022-037**

**Compare Mass of Arsenic Excavated to Arsenic Released**

Arsenic Removed During Excavation	3,808 grams
Arsenic Released Due to Spill	1.0416 grams
Excess Arsenic Removed During Excavation	3,806.96 grams

**Calculation of Arsenic (As) Removed During Excavation**

Avg. As Concentration in Excav. Soil Samples	Mass of Excavated Soil	Mass of As in Exc. Soil
6.04 mg/kg	630,493 kg	3.808 kg
		3,808 grams

Mass of excavated soil is: 535 cubic yards x 1.30 ton/CY = 695 tons = 630,493 kg

**Calculation of Arsenic Released Due to Spill**

Produced H2O Release Volume (bbl)	Produced H2O Volume (L)	As Concentration (ug/L)	As Mass Released (mg)	As Mass Released (g)
12	1908	0.905	(0.905 ug/L x 1908 L)/1000 1.72674	0.0017
Oil Release Volume (bbl)	Oil Volume (kg)	As Concentration (mg/kg)*	As Mass Released (mg)	As Mass Released (g)
15	2007.47	0.518	1039.869	1.0399
Total Arsenic Mass Released				1.0416

Assume oil has a density of 0.84

Arsenic in liquid oil was not detectable relative to the Reported Detection Limit of 2.00 mg/kg or the Method Detection Limit of 0.518 mg/kg.

\*Therefore, an arsenic concentration of 0.518 mg/kg was used for calculations.

Mass of Oil Released: (15 bbl)(159.32 kg/bbl)(0.84 density) = 2007.47 kg

Volume of Produced Released: (12 bbl)(159.32 kg/bbl) = 1908 L

Sample ID	Sample Date	Location	Arsenic
WQCC Regulation 41 Human Health Standards			10 ug/L
Oil Side	6/26/2023	Separator	0.518 mg/kg
Water Side	6/26/2023	Separator	0.905 ug/L

TABLE 2  
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA  
NOBLE ENERGY INC.  
WELLS RANCH AE20 (FLOW LINE), WELD COUNTY, COLORADO  
FREMONT PROJECT NO. C022-037

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		
TP-N 3 Ft	4/7/2022	3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00067	<0.200	<25.0	<100
TP-S 5 Ft	4/7/2022	5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00067	<0.200	<25.0	<100
TP-Mid 4 Ft	4/7/2022	4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00067	<0.200	<25.0	<100
TP-E 2 Ft	4/7/2022	2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00067	<0.200	<25.0	<100
BKG-1 1 Ft	4/7/2022	1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00067	<0.200	<25.0	<100
N. Ex. N Wall 3 Ft	4/13/2022	3	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	0.66	430	<50
N. Ex. E Wall 2 Ft	4/13/2022	2	<0.002	0.0068	<0.005	0.021	0.021	<0.005	0.012	1.6	74	<50
N. Ex. Mid 2 Ft	4/13/2022	2	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	0.92	<50	<50
N. Ex. W Wall 3 Ft	4/13/2022	3	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	<0.50	<50	<50
E Pit N Wall 5 Ft	4/13/2022	5	0.016	0.3	0.27	1.3	0.57	0.14	0.19	29	2100	150
E Pit S Wall 5 Ft	4/13/2022	5	0.0097	0.0073	<0.005	<0.010	<0.005	<0.005	<0.0038	3.8	<50	<50
E Pit E Wall 5 Ft	4/13/2022	5	0.0078	0.019	0.0084	0.036	0.021	0.0053	0.0065	2.3	<50	<50
E Pit W Wall 5 Ft	4/13/2022	5	0.023	0.083	0.021	0.082	0.031	0.0075	0.0066	2.4	<50	<50
E Pit Floor 7 Ft	4/13/2022	7	<0.002	0.019	0.0077	0.029	0.012	<0.005	<0.0038	1.4	<50	<50
W Pit N Wall 5 Ft	4/13/2022	5	0.085	0.087	0.014	0.06	0.017	<0.005	0.0045	1.6	<50	<50
W Pit S Wall 5 Ft	4/13/2022	5	0.55	0.34	0.023	0.087	0.011	<0.005	0.0059	2.2	<50	<50
W Pit E Wall 5 Ft	4/13/2022	5	0.24	0.22	0.024	0.093	0.021	0.005	0.0062	2.3	<50	<50
W Pit W Wall 5 Ft	4/13/2022	5	1.6	7	2.2	8.3	3.3	0.81	0.78	320	<50	<50
W Pit Floor 7 Ft	4/13/2022	7	0.0066	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	0.57	<50	<50
E PIT-N WALL 6FT	04/21/2022	6	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
METER-FLOOR 3FT	04/21/2022	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
METER-W WALL 2FT	04/21/2022	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
W PIT-W WALL 6FT	04/21/2022	6	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50

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

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

TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE ENERGY INC.  
WELLS RANCH AE20 (FLOW LINE), WELD COUNTY, COLORADO  
FREMONT PROJECT NO. C022-037

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
TP-N 3 Ft	4/7/2022	3	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
TP-S 5 Ft	4/7/2022	5	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
TP-Mid 4 Ft	4/7/2022	4	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
TP-E 2 Ft	4/7/2022	2	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
BKG-1 1 Ft	4/7/2022	1	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
N. EX. NWALL 2FT	4/13/2022	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0444	<0.00500	0.00875	0.124	<0.00500	0.0233	<b>0.418</b>	<b>0.304</b>
N. EX. EWALL 2FT	4/13/2022	2	0.00879	0.097	<b>0.0166</b>	<0.00500	<0.00500	<0.00500	0.0153	<0.00500	<0.00500	0.0482	<0.00500	0.00768	<b>0.255</b>	<b>0.245</b>
N. EX. MID 2FT	4/13/2022	2	<0.00500	0.00566	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
N. EX. WWALL 3FT	4/13/2022	3	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
E PIT NWALL 5FT	4/13/2022	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
E PIT SWALL 5FT	4/13/2022	5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.052	<0.00500	<0.00500	0.136	<0.00500	0.0415	<b>1.74</b>	<b>1.67</b>
E PIT EWALL 5FT	4/13/2022	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
E PIT WWALL 5FT	4/13/2022	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	<b>0.00741</b>	0.00723
E PIT FLOOR 7FT	4/13/2022	7	<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
WPIT NWALL 5FT	4/13/2022	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
WPIT SWALL 5FT	4/13/2022	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
WPIT EWALL 5FT	4/13/2022	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
WPIT WWALL 5FT	4/13/2022	5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0334	<0.00500	<0.00500	0.109	<0.00500	0.0213	<b>0.708</b>	<b>0.712</b>
WPIT FLOOR 7FT	4/13/2022	7	<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
E PIT-N WALL 6FT	04/21/2022	6	<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
METER-FLOOR 3FT	04/21/2022	3	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
METER-W WALL 2FT	04/21/2022	2	<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
W PIT-W WALL 6FT	04/21/2022	6	<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

Bold faced values exceed the COGCC Table 915-1 concentrations

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

**TABLE 4**  
**SUMMARY OF SOIL SUITABILITY FOR RECLAMATION**  
**NOBLE ENERGY INC.**  
**WELLS RANCH AE20 (FLOW LINE), WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C022-037**

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
TP-N 3 Ft	4/7/2022	3	8.08	0.274	0.669	0.178
TP-S 5 Ft	4/7/2022	5	7.65	0.783	2.44	0.357
TP-Mid 4 Ft	4/7/2022	4	8.07	0.368	0.818	0.236
TP-E 2 Ft	4/7/2022	2	8.02	0.452	0.231	0.1
BKG-1 1 Ft	4/7/2022	1	8.3	0.336	1.11	0.535
N. Ex. N Wall 3 Ft	4/13/2022	3	7.64	0.383	0.475	0.059
N. Ex. E Wall 2 Ft	4/13/2022	2	7.71	1.54	1.12	0.109
N. Ex. Mid 2 Ft	4/13/2022	2	7.95	0.23	0.24	0.0913
N. Ex. W Wall 3 Ft	4/13/2022	3	7.95	0.196	0.176	0.072
E Pit N Wall 5 Ft	4/13/2022	5	7.82	1.16	1.95	0.149
E Pit S Wall 5 Ft	4/13/2022	5	8.08	0.355	1.42	0.158
E Pit E Wall 5 Ft	4/13/2022	5	7.92	0.59	1.95	0.155
E Pit W Wall 5 Ft	4/13/2022	5	7.99	0.46	1.83	0.15
E Pit Floor 7 Ft	4/13/2022	7	7.6	0.783	1.76	0.161
W Pit N Wall 5 Ft	4/13/2022	5	7.69	<b>4.13</b>	<b>21.5</b>	1.6
W Pit S Wall 5 Ft	4/13/2022	5	7.79	<b>5.78</b>	<b>48.8</b>	1.27
W Pit E Wall 5 Ft	4/13/2022	5	7.89	2.41	3.54	0.148
W Pit W Wall 5 Ft	4/13/2022	5	7.7	<b>7.35</b>	<b>10.6</b>	0.466
W Pit Floor 7 Ft	4/13/2022	7	7.79	0.868	1.94	0.179
E PIT-N WALL 6FT	04/21/2022	6	<b>8.77</b>	0.211	0.0711	0.215
METER-FLOOR 3FT	04/21/2022	3	<b>8.67</b>	0.175	0.0292	0.2
METER-W WALL 2FT	04/21/2022	2	<b>8.53</b>	0.177	0.0201	0.171
W PIT-W WALL 6FT	04/21/2022	6	<b>8.61</b>	0.354	0.0626	0.235
BKG E-N 6FT	03/01/2023	6	8.09	NA	NA	NA
BKG E-S 6FT	03/01/2023	6	7.89	NA	NA	NA
BKG N 6FT	03/01/2023	6	<b>8.52</b>	NA	NA	NA

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
BKG S 6FT	03/01/2023	6	6.21	NA	NA	NA
BKG W 6FT	03/01/2023	6	7.96	NA	NA	NA

Bold faced values exceed the COGCC Table 915-1 concentrations

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

TABLE 5  
SUMMARY OF METALS IN SOIL CHEMISTRY DATA  
NOBLE ENERGY INC.  
WELLS RANCH AE20 (FLOW LINE), WELD COUNTY, COLORADO  
FREMONT PROJECT NO. C022-037

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
TP-N 3 Ft	4/7/2022	3	2.23	63.8	0.122	<0.25	5.43	6.11	6.42	0.2	0.0211	27.3
TP-S 5 Ft	4/7/2022	5	3.12	62.1	0.0992	<0.244	6.33	8.95	6.64	0.232	0.0255	31.1
TP-Mid 4 Ft	4/7/2022	4	2.09	53.9	0.108	<0.247	5.61	5.39	5.95	0.233	0.021	26.6
TP-E 2 Ft	4/7/2022	2	3.93	56.6	0.114	<0.245	5.59	6.58	7.78	0.275	0.0177	27.6
BKG-1 1 Ft	4/7/2022	1	2.15	87.4	0.079	<0.244	4.06	4.78	5.04	0.322	0.0136	20.3
N. EX. NWALL 2FT	4/13/2022	2	2.26	69.8	<0.205	<0.30	3.31	3.03	4.27	0.486	<0.0205	17
N. EX. EWALL 2FT	4/13/2022	2	4.61	87.8	<0.226	<0.30	8.5	8.18	9.62	0.788	0.0295	53.8
N. EX. MID 2FT	4/13/2022	2	3.57	95.7	<0.229	<0.30	5.85	6.87	7.94	0.647	<0.0229	34.5
N. EX. WWALL 3FT	4/13/2022	3	3.56	82.9	<0.227	<0.30	5.78	6.41	7.81	0.701	<0.0227	36.7
E PIT NWALL 5FT	4/13/2022	5	4.45	90.7	<0.241	<0.30	6.51	9.88	7.83	0.728	0.0308	38.8
E PIT SWALL 5FT	4/13/2022	5	5.85	109	<0.232	<0.30	6.77	7.68	7.15	0.773	0.0303	32.6
E PIT EWALL 5FT	4/13/2022	5	4.09	82.3	<0.242	<0.30	7.15	7.12	8.35	0.812	0.0276	38.4
E PIT WWALL 5FT	4/13/2022	5	4.13	173	<0.262	<0.30	5.53	7.03	8.34	0.761	0.0297	35.5
E PIT FLOOR 7FT	4/13/2022	7	13.7	93.7	<0.255	<0.30	19.3	23.6	9.94	0.885	0.08	11.7
WPIT NWALL 5FT	4/13/2022	5	6.43	109	<0.235	<0.30	7.35	9.55	12.2	0.963	0.0644	43.7
WPIT SWALL 5FT	4/13/2022	5	5.44	85.9	<0.246	<0.30	8.22	7.95	8.87	0.909	0.0371	44.1
WPIT EWALL 5FT	4/13/2022	5	7.88	77.3	<0.239	<0.30	8.37	9.1	7.55	0.799	0.0364	42
WPIT WWALL 5FT	4/13/2022	5	5.19	108	<0.231	<0.30	5.53	7.55	8.86	0.762	0.0293	35.4
WPIT FLOOR 7FT	4/13/2022	7	31	39	<0.252	<0.30	18.3	13	6.59	0.657	0.0809	27.7
E PIT-N WALL 6FT	04/21/2022	6	4.81	70.4	0.389	<0.30	9.73	9.14	11	1.09	0.0396	55.8
METER-FLOOR 3FT	04/21/2022	3	3.91	73.1	<0.229	<0.30	6.25	7	7.07	0.698	0.0307	36.5
METER-W WALL 2FT	04/21/2022	2	3.48	176	<0.229	<0.30	4.82	5.71	6.64	0.599	0.035	24.7
W PIT-W WALL 6FT	04/21/2022	6	5.01	101	<0.238	<0.30	7.12	7.75	9.46	0.735	0.0378	37.8
BKG E-N 6FT	03/01/2023	6	1.41	85.8	0.123	<0.30	3.23	3.64	2.43	<0.260	0.014	12.6
BKG E-S 6FT	03/01/2023	6	1.55	344	0.137	<0.30	4.21	3.38	2.94	<0.260	0.0177	14.4
BKG N 6FT	03/01/2023	6	2.87	61.8	0.129	<0.30	2.54	4.14	3.02	<0.260	0.0134	10.3
BKG S 6FT	03/01/2023	6	1.64	22.5	0.11	<0.30	3.93	5.51	2.28	<0.260	0.0214	15.5
BKG W 6FT	03/01/2023	6	1.45	78.4	0.129	<0.30	3.88	4.78	2.55	<0.260	0.0158	15.6

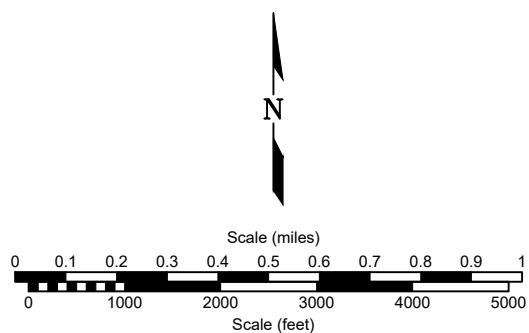
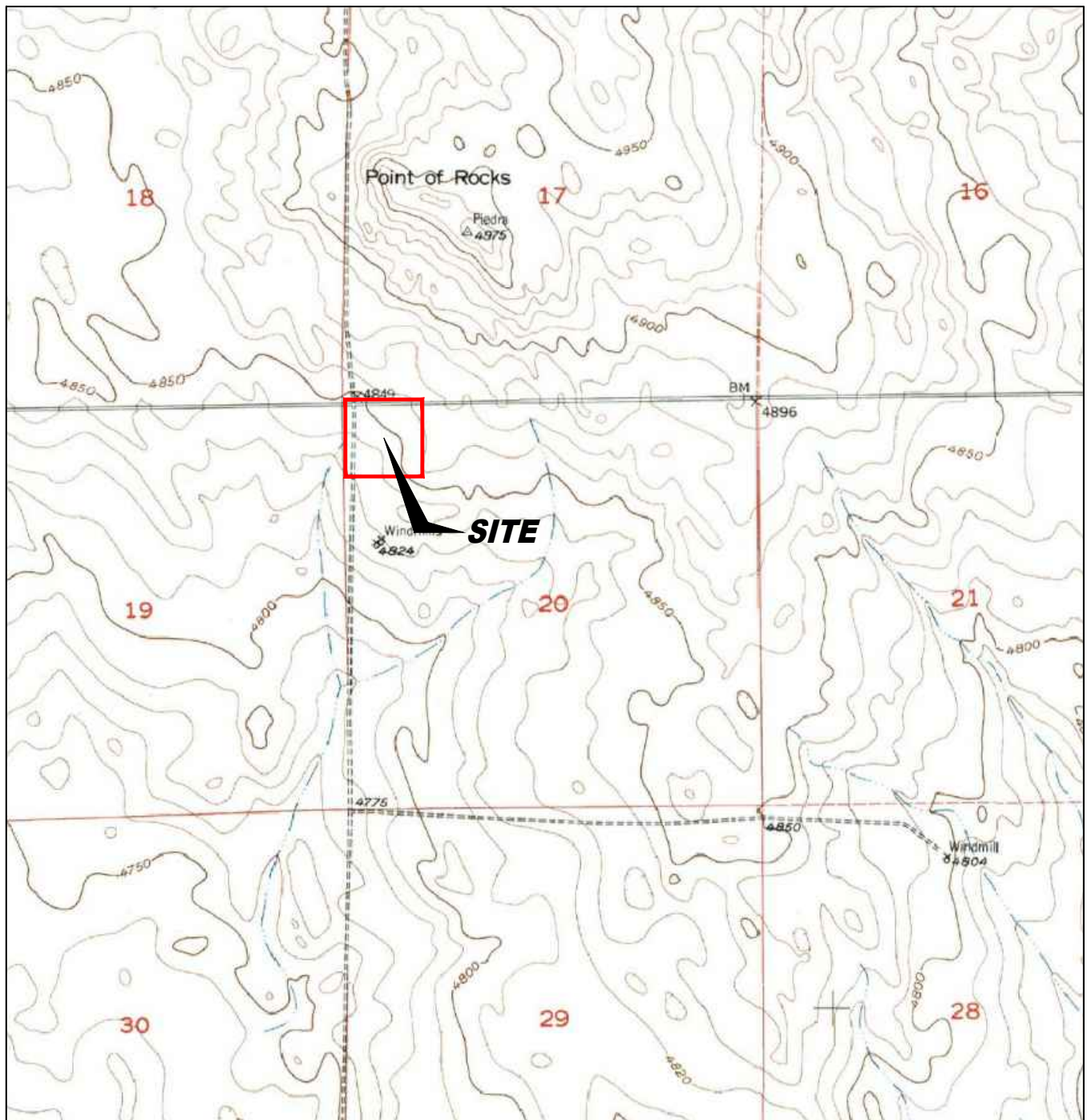
Bold faced values exceed the COGCC Table 915-1 concentrations

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

NA - Not analyzed



## **FIGURES**




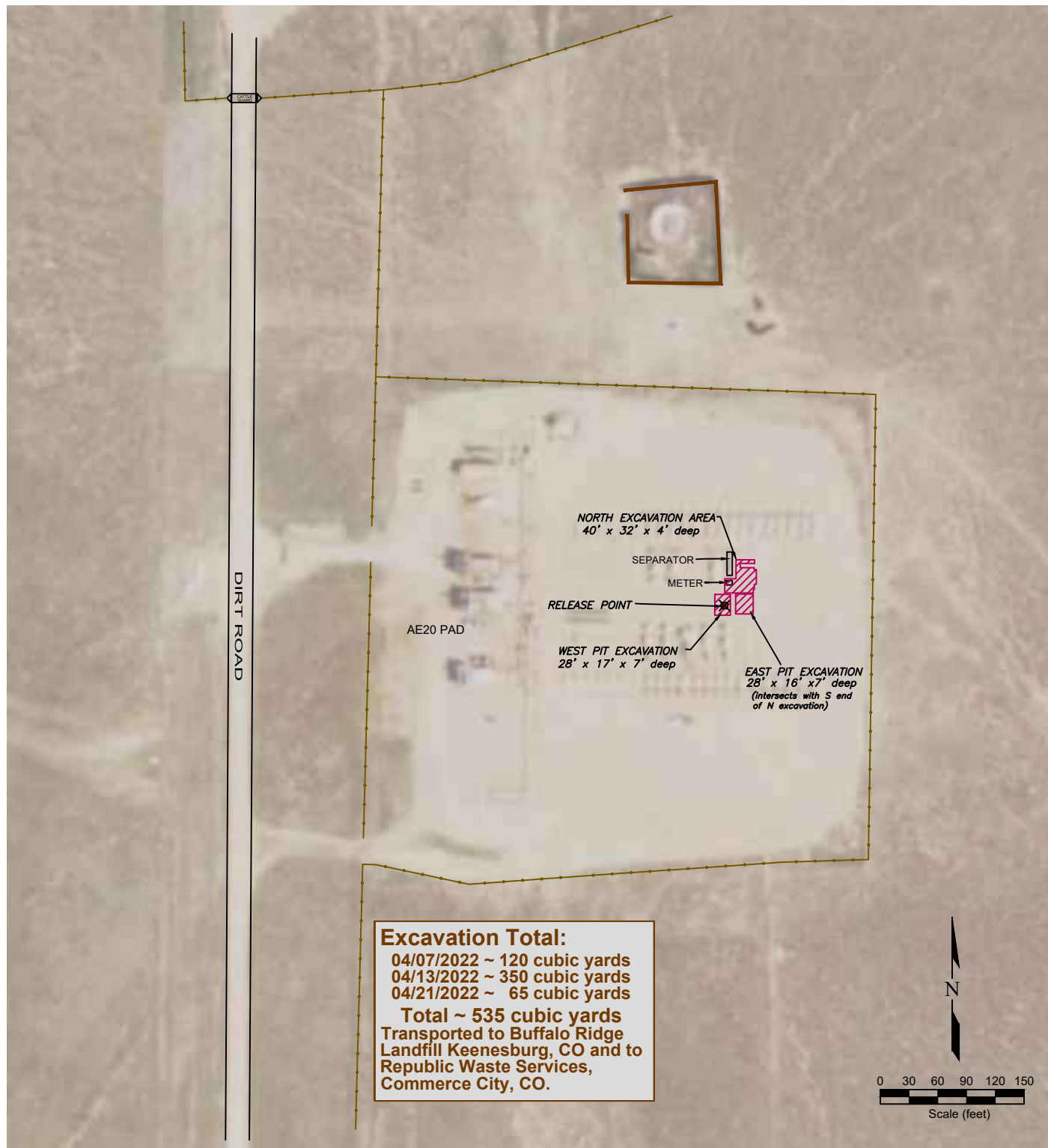
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1

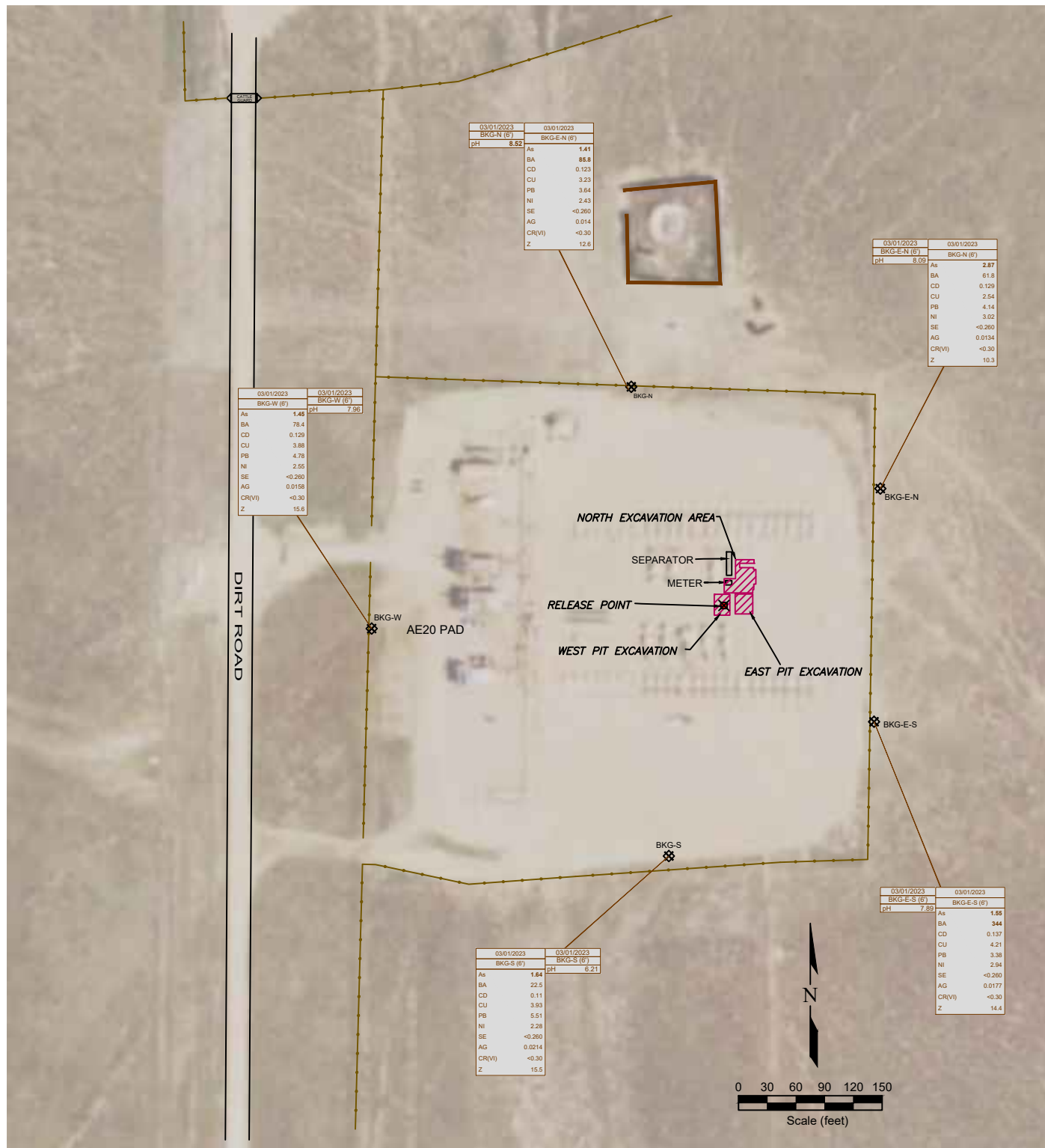
**SITE LOCATION MAP**

**NOBLE ENERGY, INC.**  
**WELLS RANCH AE20 FLOW LINE**  
 SWNW Sec. 20 T6N, R62W, 6th PM  
 Weld County, Colorado  
 40.473371°, -104.354575°

Project No. <b>C022-037</b>	Prepared by <b>TA</b>	Drawn by <b>TA</b>	
Date <b>6/1/22</b>	Reviewed by <b>EB</b>	Filename <b>22037T</b>	







# LEGEND

- RELEASE POINT
- SOIL SAMPLE LOCATION
- EXCAVATED AREAS
- EXTENT OF EXCAVATION
- CONTAINMENT WALL
- FENCE LINE

DATE SAMPLED	SAMPLE ID & DEPTH (F)
03/01/2023	BKG-E-N (F)
As	1.41
BA	88.8
CD	0.123
CU	3.23
PB	3.64
NI	2.43
SE	<0.260
AG	0.014
CR(VI)	<0.30
Z	12.6

DATE SAMPLED	SAMPLE ID & DEPTH (F)
03/01/2023	BKG-N (F)
As	1.41
BA	88.8
CD	0.123
CU	3.23
PB	3.64
NI	2.43
SE	<0.260
AG	0.014
CR(VI)	<0.30
Z	12.6

DATE SAMPLED	SAMPLE ID & DEPTH (F)
03/01/2023	BKG-S (F)
As	1.64
BA	22.5
CD	0.11
CU	3.93
PB	5.51
NI	2.28
SE	<0.260
AG	0.0214
CR(VI)	<0.30
Z	15.5

DATE SAMPLED	SAMPLE ID & DEPTH (F)
03/01/2023	BKG-E-S (F)
As	1.86
BA	344
CD	0.137
CU	4.21
PB	3.38
NI	2.94
SE	<0.260
AG	0.0177
CR(VI)	<0.30
Z	14.4

## Figure 4 SOIL CHEMISTRY MAP

NOBLE ENERGY, INC.  
WELLS RANCH AE20 FLOW LINE  
SWNW Sec. 20 T6N, R62W, 6th PM  
Weld County, Colorado  
40.473371°, -104.354575°

Project No.  
**C022-037**

Prepared by

Drawn by  
**TA**

Date  
**8/4/23**

Reviewed by  
**EB**

Filename  
**22037Q1**



**APPENDIX A**

**PHOTO LOG**





**1 – Wells Ranch AE20 stained soil resulting from a flowline release;  
looking north**



**2 – Wells Ranch AE20 stained soil pot holing,  
south of the initial location where free product surfaced**



**3 – Wells Ranch AE20 stained soil proximate to the surfacing location,  
looking east**



**4 – Wells Ranch AE20 soil staining, looking southeast**





**5 – Wells Ranch AE20 furthest north extent of surface soil staining**



**6 – Wells Ranch AE20 furthest north extent of surface soil staining,  
looking southeast**



**7 – Wells Ranch AE20 compromised flowline location within west excavation extent**



**8 – Wells Ranch AE20 east excavation extent looking west, south of the surfaced free product location**



**9 – Wells Ranch AE20 west excavation extent looking west**



**10 – Wells Ranch AE20 flowline release excavation;  
looking north from the SE corner of east excavation extent**



**11 – Wells Ranch AE20 east, west and meter skid excavation extents**

## **APPENDIX B**

### **LABORATORY DOCUMENTATION**



April 21, 2022

Fremont Environmental

Paul Henehan

8305 6th St, PO Box 1289

Wellington CO 80549

Project Name - Noble - Wells Ranch AE 20

Project Number - -

Attached are your analytical results for Noble - Wells Ranch AE 20 received by Origins Laboratory, Inc. April 07, 2022. This project is associated with Origins project number Y204147-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-N 3FT	Y204147-01	Soil	April 7, 2022 0:00	04/07/2022 16:34
TP-S 5FT	Y204147-02	Soil	April 7, 2022 0:00	04/07/2022 16:34
TP-MID 4FT	Y204147-03	Soil	April 7, 2022 0:00	04/07/2022 16:34
TP-E 2FT	Y204147-04	Soil	April 7, 2022 0:00	04/07/2022 16:34
BKG 1 1FT	Y204147-05	Soil	April 7, 2022 0:00	04/07/2022 16:34

Origins Laboratory, Inc.



*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  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

**ORIGINS**  
LABORATORY, INC

www.originslaboratory.com

120447

page 1 of 1

Client: Fremont Env.  
Address: \_\_\_\_\_  
Project Manager: Henehan  
Project Name: Noble - Wells Ranch AE20  
Project Number: \_\_\_\_\_  
Samples Collected By: EB  
Telephone Number: \_\_\_\_\_  
Email Address: phenehan@originslab.com

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative			Matrix			Analysis			Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Groundwater	Soil	Air	Other	TPH	TPH	
TP-N 3FT	4/7/22		3	X			X						1
BP-S 5FT													2
TP-M 4FT													3
TP-E 2FT													4
BKG 1 FT													5
													6
													7
													8
													9
													10

Relinquished By: [Signature] Date: 4/7/22 Time: \_\_\_\_\_  
Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received By: [Signature] Date: 4/7/22 Time: 1634  
Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Turnaround Time: Same Day ☒ 24 Hr ☐  
48 Hr ☐ 72 Hr ☐ Standard ☐

Date Results Needed

Temp Received: 15.1

Origins Laboratory, Inc.

*[Signature]*

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  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: 4764147

Client: Fremont

Client Project ID: Noble - Wells Ranch AE20

Checklist Completed by: JKH

Shipped Via: FD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 4/7/22

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_

Cooler Number/Temperature: 1 / 15.4 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °C

Thermometer ID: TC04

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		<u>same day</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<u>42</u>	<input checked="" type="checkbox"/>		<u>no sample times</u>
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)(pH < 2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) JKH

Date/Time Reviewed 4/8/22

Origins Laboratory, Inc.

*JKH*

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  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

TP-N 3FT  
4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	---------------------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.  
Y204147-01 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.178	0.0991	mg/L	1	B2D1108	04/11/2022	04/12/2022	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2D1101	04/11/2022	04/13/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	106 %	50-150			"	"	"	
------------------------	-------	--------	--	--	---	---	---	--

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2D1229	04/12/2022	04/12/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	
----------------------------------	-------	--------	--	--	---	---	---	--

Origins Laboratory, Inc.



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  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

TP-N 3FT  
4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	---------------------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.  
Y204147-01 (Soil)

## GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	99.9 %	70-130	B2D12 29	04/12/2022	04/12/2022
Surrogate: 4-Bromofluorobenzene	87.6 %	70-130	"	"	"

## Metals by Saturated Paste by EPA 6010

Calcium	1.16	0.499	meq/L	10	[CALC]	04/11/2022	04/12/2022
Magnesium	ND	0.823	"	"	"	"	"
Sodium	0.657	0.435	"	"	"	"	"

## PAH by 8270D SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L610573	04/13/2022	04/18/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

TP-N 3FT  
4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.  
Y204147-01 (Soil)

### PAH by 8270D SIM

Fluorene	ND	0.000286	0.00067	mg/Kg	1	L610573	04/13/2022	04/18/2022
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	60.3 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	68.2 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	43.9 %	29-110	"	"	"

### pH in Soil by 9045D

pH	8.08	pH Units	1	B2D1202	04/11/2022	04/12/2022
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### SAR by 20B Saturated Paste

SAR	0.669	SAR	1	B2D1110	04/11/2022	04/12/2022
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### Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.274	0.00500	mmhos/cm	1	B2D1205	04/11/2022	04/12/2022
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### Total Metals by 6020B

Arsenic	2.23	0.0855	0.25	mg/Kg	5	L610439	04/13/2022	04/15/2022
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Origins Laboratory, Inc.



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Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: -

Project: Noble - Wells Ranch AE 20

## TP-N 3FT

4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Waypoint Analytical, Inc.

Y204147-01 (Soil)

### Total Metals by 6020B

Barium	63.8	0.042	0.25	mg/Kg	5	L610439	04/13/2022	04/15/2022	
Cadmium	0.122	0.0259	0.25	"	"	"	"	"	J
Copper	5.43	0.0806	0.25	"	"	"	"	"	
Lead	6.11	0.031	0.25	"	"	"	"	"	
Nickel	6.42	0.0633	0.25	"	"	"	"	"	
Selenium	0.2	0.103	0.25	"	"	"	"	"	J
Silver	0.0211	0.0067	0.25	"	"	"	"	"	J
Zinc	27.3	0.534	2.5	"	"	"	"	"	

### Total Metals by 7196A

Chromium, Hexavalent	ND	0.25	0.513	mg/Kg	1	L611330	04/07/2022	04/18/2022	
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Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

**TP-S 5FT**  
**4/7/2022 12:00:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y204147-02 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.357	0.0992	mg/L	1	B2D1108	04/11/2022	04/12/2022	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2D1101	04/11/2022	04/13/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	107 %	50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2D1229	04/12/2022	04/12/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	
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Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

TP-S 5FT  
4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y204147-02 (Soil)

**GBTEX+TMBs by 8260D**

Surrogate: Toluene-d8	94.6 %	70-130	B2D12 29	04/12/2022	04/12/2022
Surrogate: 4-Bromofluorobenzene	90.9 %	70-130	"	"	"

**Metals by Saturated Paste by EPA 6010**

Calcium	2.41	0.499	meq/L	10	[CALC]	04/11/2022	04/12/2022
Magnesium	1.97	0.823	"	"	"	"	"
Sodium	3.62	0.435	"	"	"	"	"

**PAH by 8270D SIM**

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L610573	04/13/2022	04/18/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## TP-S 5FT

4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Waypoint Analytical, Inc. Y204147-02 (Soil)

### PAH by 8270D SIM

Fluorene	ND	0.000286	0.00067	mg/Kg	1	L610573	04/13/2022	04/18/2022
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	58.3 %		33-115			"	"	"
Surrogate: 4-Terphenyl-d14	68.4 %		33-122			"	"	"
Surrogate: Nitrobenzene-d5	44.8 %		29-110			"	"	"

### pH in Soil by 9045D

pH	7.65			pH Units	1	B2D1202	04/11/2022	04/12/2022
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### SAR by 20B Saturated Paste

SAR	2.44			SAR	1	B2D1110	04/11/2022	04/12/2022
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### Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.783		0.00500	mmhos/cm	1	B2D1205	04/11/2022	04/12/2022
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### Total Metals by 6020B

Arsenic	3.12	0.0855	0.25	mg/Kg	5	L610439	04/13/2022	04/15/2022
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Origins Laboratory, Inc.



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Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: -

Project: Noble - Wells Ranch AE 20

## TP-S 5FT

4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Waypoint Analytical, Inc.

Y204147-02 (Soil)

### Total Metals by 6020B

Barium	62.1	0.042	0.25	mg/Kg	5	L610439	04/13/2022	04/15/2022	
Cadmium	0.0992	0.0259	0.25	"	"	"	"	"	J
Copper	6.33	0.0806	0.25	"	"	"	"	"	
Lead	8.95	0.031	0.25	"	"	"	"	"	
Nickel	6.64	0.0633	0.25	"	"	"	"	"	
Selenium	0.232	0.103	0.25	"	"	"	"	"	J
Silver	0.0255	0.0067	0.25	"	"	"	"	"	J
Zinc	31.1	0.534	2.5	"	"	"	"	"	

### Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L611330	04/07/2022	04/18/2022	
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Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## TP-MID 4FT

4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. Y204147-03 (Soil)

### Boron (DTPA Sorbitol)

Boron	0.236	0.0981	mg/L	1	B2D1108	04/11/2022	04/12/2022	
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### DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2D1101	04/11/2022	04/13/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	108 %	50-150			"	"	"	
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### GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2D1229	04/12/2022	04/12/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	
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Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## TP-MID 4FT

4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. Y204147-03 (Soil)

### GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	96.6 %	70-130	B2D12 29	04/12/2022	04/12/2022
Surrogate: 4-Bromofluorobenzene	89.3 %	70-130	"	"	"

### Metals by Saturated Paste by EPA 6010

Calcium	1.44	0.499	meq/L	10	[CALC]	04/11/2022	04/12/2022
Magnesium	1.05	0.823	"	"	"	"	"
Sodium	0.913	0.435	"	"	"	"	"

### PAH by 8270D SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L610573	04/13/2022	04/18/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## TP-MID 4FT

4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Waypoint Analytical, Inc. Y204147-03 (Soil)

### PAH by 8270D SIM

Fluorene	ND	0.000286	0.00067	mg/Kg	1	L610573	04/13/2022	04/18/2022
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	63.3 %		33-115			"	"	"
Surrogate: 4-Terphenyl-d14	72.2 %		33-122			"	"	"
Surrogate: Nitrobenzene-d5	47.7 %		29-110			"	"	"

### pH in Soil by 9045D

pH	8.07			pH Units	1	B2D1202	04/11/2022	04/12/2022
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### SAR by 20B Saturated Paste

SAR	0.818			SAR	1	B2D1110	04/11/2022	04/12/2022
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### Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.368		0.00500	mmhos/cm	1	B2D1205	04/11/2022	04/12/2022
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### Total Metals by 6020B

Arsenic	2.09	0.0855	0.25	mg/Kg	5	L610439	04/13/2022	04/15/2022
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Origins Laboratory, Inc.



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Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: -

Project: Noble - Wells Ranch AE 20

## TP-MID 4FT

4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Waypoint Analytical, Inc.

Y204147-03 (Soil)

### Total Metals by 6020B

Barium	53.9	0.042	0.25	mg/Kg	5	L610439	04/13/2022	04/15/2022	
Cadmium	0.108	0.0259	0.25	"	"	"	"	"	J
Copper	5.61	0.0806	0.25	"	"	"	"	"	
Lead	5.39	0.031	0.25	"	"	"	"	"	
Nickel	5.95	0.0633	0.25	"	"	"	"	"	
Selenium	0.233	0.103	0.25	"	"	"	"	"	J
Silver	0.021	0.0067	0.25	"	"	"	"	"	J
Zinc	26.6	0.534	2.5	"	"	"	"	"	

### Total Metals by 7196A

Chromium, Hexavalent	ND	0.247	0.508	mg/Kg	1	L611330	04/07/2022	04/18/2022	
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Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

TP-E 2FT  
4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y204147-04 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.100	0.100	mg/L	1	B2D1108	04/11/2022	04/12/2022	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2D1101	04/11/2022	04/13/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	107 %	50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2D1229	04/12/2022	04/12/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	
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Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## TP-E 2FT

4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. Y204147-04 (Soil)

### GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	100 %	70-130	B2D12 29	04/12/2022	04/12/2022
Surrogate: 4-Bromofluorobenzene	89.7 %	70-130	"	"	"

### Metals by Saturated Paste by EPA 6010

Calcium	2.13	0.499	meq/L	10	[CALC]	04/11/2022	04/12/2022
Magnesium	1.44	0.823	"	"	"	"	"
Sodium	ND	0.435	"	"	"	"	"

### PAH by 8270D SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L610573	04/13/2022	04/18/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

TP-E 2FT  
4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.  
Y204147-04 (Soil)

### PAH by 8270D SIM

Fluorene	ND	0.000286	0.00067	mg/Kg	1	L610573	04/13/2022	04/18/2022
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	62.3 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	68.7 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	46.4 %	29-110	"	"	"

### pH in Soil by 9045D

pH	8.02	pH Units	1	B2D1202	04/11/2022	04/12/2022
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### SAR by 20B Saturated Paste

SAR	0.231	SAR	1	B2D1110	04/11/2022	04/12/2022
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### Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.452	0.00500	mmhos/cm	1	B2D1205	04/11/2022	04/12/2022
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### Total Metals by 6020B

Arsenic	3.93	0.0855	0.25	mg/Kg	5	L610439	04/13/2022	04/15/2022
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Origins Laboratory, Inc.



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Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: -

Project: Noble - Wells Ranch AE 20

## TP-E 2FT

4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Waypoint Analytical, Inc.

Y204147-04 (Soil)

### Total Metals by 6020B

Barium	56.6	0.042	0.25	mg/Kg	5	L610439	04/13/2022	04/15/2022	
Cadmium	0.114	0.0259	0.25	"	"	"	"	"	J
Copper	5.59	0.0806	0.25	"	"	"	"	"	
Lead	6.58	0.031	0.25	"	"	"	"	"	
Nickel	7.78	0.0633	0.25	"	"	"	"	"	
Selenium	0.275	0.103	0.25	"	"	"	"	"	
Silver	0.0177	0.0067	0.25	"	"	"	"	"	J
Zinc	27.6	0.534	2.5	"	"	"	"	"	

### Total Metals by 7196A

Chromium, Hexavalent	ND	0.245	0.503	mg/Kg	1	L611330	04/07/2022	04/18/2022	
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Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

**BKG 1 1FT**  
**4/7/2022 12:00:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y204147-05 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.535	0.0990	mg/L	1	B2D1108	04/11/2022	04/12/2022	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2D1101	04/11/2022	04/13/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	105 %	50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2D1229	04/12/2022	04/12/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	
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Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## BKG 1 1FT

4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. Y204147-05 (Soil)

### GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	100 %	70-130	B2D12 29	04/12/2022	04/12/2022
Surrogate: 4-Bromofluorobenzene	92.1 %	70-130	"	"	"

### Metals by Saturated Paste by EPA 6010

Calcium	0.843	0.499	meq/L	10	[CALC]	04/11/2022	04/12/2022
Magnesium	ND	0.823	"	"	"	"	"
Sodium	0.826	0.435	"	"	"	"	"

### PAH by 8270D SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L610573	04/13/2022	04/18/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"

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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

**BKG 1 1FT**  
**4/7/2022 12:00:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Waypoint Analytical, Inc.**  
**Y204147-05 (Soil)**

**PAH by 8270D SIM**

Fluorene	ND	0.000286	0.00067	mg/Kg	1	L610573	04/13/2022	04/18/2022
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	59 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	66.7 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	45 %	29-110	"	"	"

**pH in Soil by 9045D**

pH	8.26	pH Units	1	B2D1202	04/11/2022	04/12/2022
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**SAR by 20B Saturated Paste**

SAR	1.11	SAR	1	B2D1110	04/11/2022	04/12/2022
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.336	0.00500	mmhos/cm	1	B2D1205	04/11/2022	04/12/2022
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**Total Metals by 6020B**

Arsenic	2.15	0.0855	0.25	mg/Kg	5	L610439	04/13/2022	04/15/2022
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Origins Laboratory, Inc.



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Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: -

Project: Noble - Wells Ranch AE 20

## BKG 1 1FT

4/7/2022 12:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Waypoint Analytical, Inc.

Y204147-05 (Soil)

### Total Metals by 6020B

Barium	87.4	0.042	0.25	mg/Kg	5	L610439	04/13/2022	04/15/2022	
Cadmium	0.079	0.0259	0.25	"	"	"	"	"	J
Copper	4.06	0.0806	0.25	"	"	"	"	"	
Lead	4.78	0.031	0.25	"	"	"	"	"	
Nickel	5.04	0.0633	0.25	"	"	"	"	"	
Selenium	0.322	0.103	0.25	"	"	"	"	"	
Silver	0.0136	0.0067	0.25	"	"	"	"	"	J
Zinc	20.3	0.534	2.5	"	"	"	"	"	

### Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L611330	04/07/2022	04/18/2022	
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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

Extractable Petroleum Hydrocarbons by 8015D - Quality Control  
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2D1101 - EPA 3550B										
Blank (B2D1101-BLK1)					Prepared: 04/11/2022 Analyzed: 04/13/2022					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	28		"	24.9		114	50-150			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2D1101 - EPA 3550B

**LCS (B2D1101-BS1)**

Prepared: 04/11/2022 Analyzed: 04/13/2022

Diesel (C10-C28)	1070	50.0	mg/kg	1000		107	70-130			
Residual Range Organics (C28-C40)	1260	200	"	1000		126	70-130			
Surrogate: o-Terphenyl	58		"	49.8		116	50-150			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B2D1101 - EPA 3550B**

Matrix Spike (B2D1101-MS1)		Source: Y204145-01			Prepared: 04/11/2022 Analyzed: 04/13/2022					
Diesel (C10-C28)	1090	50.0	mg/kg	1000	ND	109	70-130			
Residual Range Organics (C28-C40)	1300	200	"	1000	ND	130	70-130			
Surrogate: o-Terphenyl	57		"	49.8		114	50-150			

Origins Laboratory, Inc.



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Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: -

Project: Noble - Wells Ranch AE 20

## Extractable Petroleum Hydrocarbons by 8015D - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B2D1101 - EPA 3550B

Matrix Spike Dup (B2D1101-MSD1)		Source: Y204145-01			Prepared: 04/11/2022 Analyzed: 04/13/2022					
Diesel (C10-C28)	1070	50.0	mg/kg	1000	ND	107	70-130	2.20	35	
Residual Range Organics (C28-C40)	1260	200	"	1000	ND	126	70-130	2.99	35	
Surrogate: o-Terphenyl	56		"	49.8		113	50-150			

Origins Laboratory, Inc.



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Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: -

Project: Noble - Wells Ranch AE 20

## Extractable Petroleum Hydrocarbons by 8015D - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2D1229 - EPA 5030 (soil)										
Blank (B2D1229-BLK1)					Prepared: 04/12/2022 Analyzed: 04/12/2022					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.0100	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		90.6	70-130			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B2D1229 - EPA 5030 (soil)</b>										
<b>LCS (B2D1229-BS1)</b>					Prepared: 04/12/2022 Analyzed: 04/12/2022					
1,2,4-Trimethylbenzene	0.108	0.00200	mg/kg	0.100		108	70-130			
1,3,5-Trimethylbenzene	0.112	0.00200	"	0.100		112	70-130			
Benzene	0.115	0.00200	"	0.100		115	70-130			
Ethylbenzene	0.109	0.00200	"	0.100		109	70-130			
Naphthalene	0.0962	0.0100	"	0.100		96.2	70-130			
Toluene	0.118	0.00200	"	0.100		118	70-130			
o-Xylene	0.107	0.00200	"	0.100		107	70-130			
m,p-Xylene	0.216	0.00400	"	0.200		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.8	70-130			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2D1229 - EPA 5030 (soil)										
Matrix Spike (B2D1229-MS1)		Source: Y204220-01			Prepared: 04/12/2022 Analyzed: 04/12/2022					
1,2,4-Trimethylbenzene	0.116	0.00200	mg/kg	0.100	ND	116	70-130			
1,3,5-Trimethylbenzene	0.114	0.00200	"	0.100	ND	114	70-130			
Benzene	0.124	0.00200	"	0.100	ND	124	70-130			
Ethylbenzene	0.107	0.00200	"	0.100	ND	107	70-130			
Naphthalene	0.117	0.0100	"	0.100	ND	117	70-130			
Toluene	0.120	0.00200	"	0.100	ND	120	70-130			
o-Xylene	0.112	0.00200	"	0.100	ND	112	70-130			
m,p-Xylene	0.222	0.00400	"	0.200	ND	111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.4	70-130			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B2D1229 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (B2D1229-MSD1)</b>		<b>Source: Y204220-01</b>			Prepared: 04/12/2022 Analyzed: 04/12/2022					
1,2,4-Trimethylbenzene	0.104	0.00200	mg/kg	0.100	ND	104	70-130	10.8	20	
1,3,5-Trimethylbenzene	0.102	0.00200	"	0.100	ND	102	70-130	10.7	20	
Benzene	0.107	0.00200	"	0.100	ND	107	70-130	14.9	20	
Ethylbenzene	0.0960	0.00200	"	0.100	ND	96.0	70-130	11.2	20	
Naphthalene	0.107	0.0100	"	0.100	ND	107	70-130	8.49	20	
Toluene	0.104	0.00200	"	0.100	ND	104	70-130	14.6	20	
o-Xylene	0.100	0.00200	"	0.100	ND	100	70-130	10.6	20	
m,p-Xylene	0.196	0.00400	"	0.200	ND	98.2	70-130	12.2	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.4	70-130			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Saturated Paste - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B2D1202 - NO PREP

#### Duplicate (B2D1202-DUP1)

Source: Y204147-01

Prepared: 04/11/2022 Analyzed: 04/12/2022

pH	7.93		pH Units	8.08		1.87	25
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#### Batch B2D1205 - NO PREP

#### Blank (B2D1205-BLK1)

Prepared: 04/11/2022 Analyzed: 04/12/2022

Specific Conductance (EC)	0.000900	0.00500	mmhos/cm
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#### Duplicate (B2D1205-DUP1)

Source: Y203350-02

Prepared: 04/11/2022 Analyzed: 04/12/2022

Specific Conductance (EC)	6.27	0.00500	mmhos/cm	6.07		3.32	25
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Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

**PAH by 8270D SIM - Quality Control**  
**Waypoint Analytical, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L610573 - 3550B**

MSD (L 85691-MSD-L610573)		Source: 85691			Prepared: 04/13/2022 Analyzed: 04/18/2022					
Pyrene	0.1	0.000643	mg/Kg	0.166	0.000857	59.7	30-130	5.8	30	
Naphthalene	0.0806	0.000484	"	0.166	85691	48.5	30-130	3.2	30	
Indeno(1,2,3-cd)pyrene	0.0974	0.000627	"	0.166	85691	58.6	30-130	19.1	30	
Fluorene	0.0881	0.000286	"	0.166	85691	53	30-130	7.4	30	
Fluoranthene	0.0985	0.000394	"	0.166	0.000625	58.9	30-130	8.2	30	
Dibenz(a,h)anthracene	0.104	0.000614	"	0.166	85691	62.6	30-130	19.1	30	
Chrysene	0.0849	0.000624	"	0.166	85691	51.1	30-130	6.1	30	
Benzo(b)fluoranthene	0.068	0.000585	"	0.166	85691	40.9	30-130	10.3	30	
Benzo(a)pyrene	0.0864	0.000468	"	0.166	0.000797	51.5	30-130	14.5	30	
Benzo(a)anthracene	0.0904	0.000493	"	0.166	85691	54.4	30-130	7.6	30	
Anthracene	0.0933	0.000334	"	0.166	85691	56.2	30-130	5.8	30	
Acenaphthene	0.0796	0.000304	"	0.166	85691	47.9	30-130	5.2	30	
2-Methylnaphthalene	0.0843	0.000645	"	0.166	85691	50.7	30-130	3.3	30	
1-Methylnaphthalene	0.087	0.000364	"	0.166	85691	52.4	30-130	2.7	30	
Benzo(k)fluoranthene	0.062	0.000437	"	0.166	85691	37.3	30-130	14.7	30	
Surrogate: Nitrobenzene-d5	41.8		"	0.332	163	41.8	29-110			
Surrogate: 4-Terphenyl-d14	66.5		"	0.332	251	66.5	33-122			
Surrogate: 2-Fluorobiphenyl	56.3		"	0.332	227	56.3	33-115			

MS (L 85691-MS-L610573)		Source: 85691			Prepared: 04/13/2022 Analyzed: 04/18/2022					
Dibenz(a,h)anthracene	0.126	0.000614	mg/Kg	0.165	85691	76.3	30-130			
Pyrene	0.106	0.000643	"	0.165	0.000857	63.7	30-130			
Naphthalene	0.0833	0.000484	"	0.165	85691	50.4	30-130			
Indeno(1,2,3-cd)pyrene	0.118	0.000627	"	0.165	85691	71.5	30-130			
Fluoranthene	0.107	0.000394	"	0.165	0.000625	64.4	30-130			
Chrysene	0.0903	0.000624	"	0.165	85691	54.7	30-130			
1-Methylnaphthalene	0.0894	0.000364	"	0.165	85691	54.1	30-130			

Origins Laboratory, Inc.



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  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

**PAH by 8270D SIM - Quality Control**  
**Waypoint Analytical, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L610573 - 3550B**

MS (L 85691-MS-L610573)		Source: 85691			Prepared: 04/13/2022 Analyzed: 04/18/2022					
Benzo(k)fluoranthene	0.0719	0.000437	mg/Kg	0.165	85691	43.5	30-130			
Fluorene	0.0949	0.000286	"	0.165	85691	57.5	30-130			
2-Methylnaphthalene	0.0872	0.000645	"	0.165	85691	52.8	30-130			
Benzo(b)fluoranthene	0.0754	0.000585	"	0.165	85691	45.6	30-130			
Acenaphthene	0.0839	0.000304	"	0.165	85691	50.8	30-130			
Anthracene	0.0989	0.000334	"	0.165	85691	59.9	30-130			
Benzo(a)anthracene	0.0976	0.000493	"	0.165	85691	59.1	30-130			
Benzo(a)pyrene	0.1	0.000468	"	0.165	0.000797	60.1	30-130			
Surrogate: Nitrobenzene-d5	43.9		"	0.33	163	43.9	29-110			
Surrogate: 4-Terphenyl-d14	70.6		"	0.33	251	70.6	33-122			
Surrogate: 2-Fluorobiphenyl	58.4		"	0.33	227	58.4	33-115			

LCS (LCS-L610573)		Prepared: 04/13/2022 Analyzed: 04/18/2022								
Benzo(a)anthracene	0.102	0.000493	mg/Kg	0.167		61	30-130			
Dibenz(a,h)anthracene	0.124	0.000614	"	0.167		74.2	30-130			
Chrysene	0.0941	0.000624	"	0.167		56.3	30-130			
Benzo(k)fluoranthene	0.0706	0.000437	"	0.167		42.2	30-130			
Benzo(a)pyrene	0.104	0.000468	"	0.167		62.2	30-130			
Anthracene	0.108	0.000334	"	0.167		64.6	30-130			
Acenaphthene	0.0863	0.000304	"	0.167		51.6	30-130			
Fluoranthene	0.11	0.000394	"	0.167		65.8	30-130			
1-Methylnaphthalene	0.0927	0.000364	"	0.167		55.5	30-130			
Fluorene	0.0981	0.000286	"	0.167		58.7	30-130			
Indeno(1,2,3-cd)pyrene	0.121	0.000627	"	0.167		72.4	30-130			
Naphthalene	0.0868	0.000484	"	0.167		51.9	30-130			
Pyrene	0.111	0.000643	"	0.167		66.4	30-130			
Benzo(b)fluoranthene	0.0798	0.000585	"	0.167		47.7	30-130			

Origins Laboratory, Inc.



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  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

**PAH by 8270D SIM - Quality Control**  
**Waypoint Analytical, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L610573 - 3550B**

**LCS (LCS-L610573)**

Prepared: 04/13/2022 Analyzed: 04/18/2022

2-Methylnaphthalene	0.0891	0.000645	mg/Kg	0.167		53.3	30-130			
Surrogate: 4-Terphenyl-d14	80.4		"	0.333		80.4	33-122			
Surrogate: 2-Fluorobiphenyl	66.6		"	0.333		66.6	33-115			
Surrogate: Nitrobenzene-d5	47.4		"	0.333		47.4	29-110			

**LRB (LRB-L610573)**

Prepared: 04/13/2022 Analyzed: 04/18/2022

Benzo(a)anthracene	ND	0.00067	mg/Kg				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Dibenz(a,h)anthracene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
Benzo(k)fluoranthene	0.000486	0.00067	"				-			J
Naphthalene	ND	0.00067	"				-			
Pyrene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(a)pyrene	0.000546	0.00067	"				-			J
Acenaphthene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
1-Methylnaphthalene	ND	0.00067	"				-			
Surrogate: 2-Fluorobiphenyl	61.2		"	0.333		61.2	33-115			
Surrogate: 4-Terphenyl-d14	73.8		"	0.333		73.8	33-122			
Surrogate: Nitrobenzene-d5	45.9		"	0.333		45.9	29-110			

Origins Laboratory, Inc.



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  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## Total Metals by 6020B - Quality Control Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch L610439 - 3050B</b>										
<b>MSD (L 86498-MSD-L610439)</b>			<b>Source: 86498</b>		Prepared: 04/13/2022 Analyzed: 04/15/2022					
Nickel	6.51	0.0633	mg/Kg	2.35	4.25	96	75-125	105	80	
Zinc	42.9	0.534	"	23.5	20.4	96	75-125	44.4	80	
Selenium	3.93	0.103	"	4.7	0.243	78	75-125	1.5	80	
Lead	6.44	0.031	"	2.35	4.69	74	75-125	25.1	80	*
Copper	7.25	0.0806	"	2.35	5.28	84	75-125	116	80	
Cadmium	0.554	0.0259	"	0.47	0.0852	100	75-125	63.5	80	
Barium	55.3	0.042	"	4.7	53.8	32	75-125	118	80	*
Arsenic	3.09	0.0855	"	2.35	2.4	29	75-125	77.6	80	*
Silver	0.497	0.0067	"	0.47	0.021	101	75-125	6	80	
<b>MS (L 86498-MS-L610439)</b>			<b>Source: 86498</b>		Prepared: 04/13/2022 Analyzed: 04/15/2022					
Selenium	3.99	0.103	mg/Kg	4.93	0.243	76	75-125			
Silver	0.528	0.0067	"	0.493	0.021	103	75-125			
Zinc	67.4	0.534	"	24.6	20.4	191	75-125			*
Nickel	20.9	0.0633	"	2.46	4.25	676	75-125			*
Lead	8.29	0.031	"	2.46	4.69	146	75-125			*
Copper	26.5	0.161	"	2.46	5.28	862	75-125			*
Cadmium	1.07	0.0259	"	0.493	0.0852	200	75-125			*
Barium	214	0.042	"	4.93	53.8	NR	75-125			*
Arsenic	7.01	0.0855	"	2.46	2.4	187	75-125			*
<b>LCS (LCS-L610439)</b>			Prepared: 04/13/2022 Analyzed: 04/15/2022							
Arsenic	2.44	0.0855	mg/Kg	2.5		98	80-120			
Selenium	4.87	0.103	"	5		97	80-120			
Nickel	2.84	0.0633	"	2.5		114	80-120			
Lead	2.42	0.031	"	2.5		97	80-120			
Copper	2.8	0.0806	"	2.5		112	80-120			

Origins Laboratory, Inc.



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  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## Total Metals by 6020B - Quality Control Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch L610439 - 3050B

#### LCS (LCS-L610439)

Prepared: 04/13/2022 Analyzed: 04/15/2022

Cadmium	0.478	0.0259	mg/Kg	0.5		96	80-120			
Zinc	25.8	0.534	"	25		103	80-120			
Barium	4.83	0.042	"	5		97	80-120			
Silver	0.518	0.0067	"	0.5		104	80-120			

#### LRB (LRB-L610439)

Prepared: 04/13/2022 Analyzed: 04/15/2022

Lead	0.116	0.25	mg/Kg				-			J
Arsenic	ND	0.25	"				-			
Barium	ND	0.25	"				-			
Copper	ND	0.25	"				-			
Nickel	ND	0.25	"				-			
Selenium	ND	0.25	"				-			
Silver	ND	0.25	"				-			
Zinc	ND	2.5	"				-			
Cadmium	ND	0.25	"				-			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

## Total Metals by 7196A - Quality Control Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch L611330 -</b>										
<b>DUP (L 85735-DUP)</b>		<b>Source: Y204147-01</b>			Prepared: Analyzed: 04/18/2022					
Chromium, Hexavalent	ND	0.244	mg/Kg		85735	-		0	20	
<b>MS (L 85735-MS)</b>		<b>Source: Y204147-01</b>			Prepared: Analyzed: 04/18/2022					
Chromium, Hexavalent	7.11	0.249	mg/Kg	8.18	85735	87	75-125			
<b>LCS (LCS)</b>					Prepared: Analyzed: 04/18/2022					
Chromium, Hexavalent	6.25	0.244	mg/Kg	8		78	75-125			
<b>LRB (LRB)</b>					Prepared: Analyzed: 04/18/2022					
Chromium, Hexavalent	ND	0.5	mg/Kg							

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: -  
Project: Noble - Wells Ranch AE 20

### Notes and Definitions

U Sample is Non-Detect.

J Estimated Value. Analyte below reported quantitation limit.

\* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Origins Laboratory, Inc.



*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, Colorado 80403

303.277.9310

April 20, 2022

Paul Henchan

Fremont Environmental

PO Box 1289

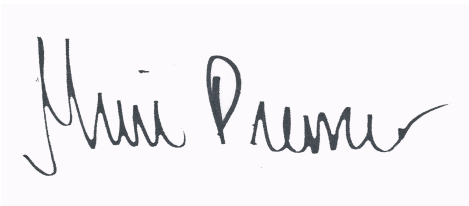
Wellington, CO 80549

RE: Noble - Wells Ranch AE20

Work Order #2204188

Enclosed are the results of analyses for samples received by Summit Scientific on 04/13/22 16:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury  
President



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N. EX. NWALL 2FT	2204188-01	Soil	04/12/22 00:00	04/13/22 16:45
N. EX. EWALL 2FT	2204188-02	Soil	04/12/22 00:00	04/13/22 16:45
N. EX. MID 2FT	2204188-03	Soil	04/12/22 00:00	04/13/22 16:45
N. EX. WWALL 3FT	2204188-04	Soil	04/12/22 00:00	04/13/22 16:45
E PIT NWALL 5FT	2204188-05	Soil	04/12/22 00:00	04/13/22 16:45
E PIT SWALL 5FT	2204188-06	Soil	04/12/22 00:00	04/13/22 16:45
E PIT EWALL 5FT	2204188-07	Soil	04/12/22 00:00	04/13/22 16:45
E PIT WWALL 5FT	2204188-08	Soil	04/12/22 00:00	04/13/22 16:45
E PIT FLOOR 7FT	2204188-09	Soil	04/12/22 00:00	04/13/22 16:45
WPIT NWALL 5FT	2204188-10	Soil	04/12/22 00:00	04/13/22 16:45
WPIT SWALL 5FT	2204188-11	Soil	04/12/22 00:00	04/13/22 16:45
WPIT EWALL 5FT	2204188-12	Soil	04/12/22 00:00	04/13/22 16:45
WPIT WWALL 5FT	2204188-13	Soil	04/12/22 00:00	04/13/22 16:45
WPIT FLOOR 7FT	2204188-14	Soil	04/12/22 00:00	04/13/22 16:45

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

S<sub>2</sub>

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

Page 1 of 2

Client: Fremont Environmental

Project Manager: Paul Henehan

Address: P.O. Box 1289

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

City/State/Zip: Wellington, CO 80549

Bill to: Jacob

Phone: 303-956-8714

Project Name: Noble - Wells Ranch AE20

Sampler Name: EB

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested										Special Instructions
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN - 915	BTXEX - 910	ORO Metals	DRO/ORO	SAR	EC	pH	Boron	PAH - 915		
1	N EX. NWALL 2FT	4/10/22		3			X			X				X	X	X	X	X	X	X			
2	N EX. EWALL 2FT						X			X				X	X	X	X	X	X				
3	N EX. MID 2FT						X			X				X	X	X	X	X	X				
4	N EX. W WALL 3FT						X			X				X	X	X	X	X	X				
5	E PIT NWALL 5FT						X			X				X	X	X	X	X	X				
6	E PIT SWALL 5FT						X			X				X	X	X	X	X	X				
7	E PIT EWALL 5FT						X			X				X	X	X	X	X	X				
8	E PIT W WALL 5FT						X			X				X	X	X	X	X	X				
9	E PIT FLOOR 7FT						X			X				X	X	X	X	X	X				
10	W PIT NWALL 5FT						X			X				X	X	X	X	X	X				

Relinquished by: <i>[Signature]</i>	Date/Time: 4/13/22 1645	Received by: <i>[Signature]</i>	Date/Time: 4/13/22 1645	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/> 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours	
Sample Integrity:				Temperature Upon Receipt: 47	
Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No					

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1-88/1000



# Summit Scientific

S<sub>2</sub>

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

Page 2 of 2

Client: Fremont Environmental

Project Manager: Paul Henchan

Address: P.O Box 1289

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

City/State/Zip: Wellington, CO 80549

Bill to: Jacob

Phone: 303-956-8714

Project Name: Noble - Wells Ranch A520

Sampler Name: Black

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested										Special Instructions
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN - 915	BTEx-910	Geo Metals	DRO/ORO	SAR	EC	pH	Boron	PAH - 915		
1	WPET SWALL SFT	4/13/22		3			X			X				X	X	X	X	X	X	X			
2	WPET E WALL SFT			1			X			X				X	X	X	X	X	X	X			
3	WPET W WALL SFT			1			X			X				X	X	X	X	X	X	X			
4	WPET FLOOR 7FT			1			X			X				X	X	X	X	X	X	X			
5																							
6																							
7																							
8																							
9																							
10																							

Relinquished by: <u>[Signature]</u>	Date/Time: <u>4/13/22 1645</u>	Received by: <u>[Signature]</u>	Date/Time: <u>4/13/22 1645</u>	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/>	72 hours <input type="checkbox"/>
				24 hours <input type="checkbox"/>	Standard <input type="checkbox"/>
				48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>4.7</u>	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

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C. 8813022

S<sub>2</sub>

2/2

2204188

## Sample Receipt Checklist

S2 Work Order#

Client: FremontClient Project ID: Noble - Welk Ranch AF20Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

	-			
--	---	--	--	--

Matrix (Check all that apply)

☐

Air

☐

Soil/Solid

☒

Water

☐

Other

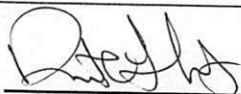
☐

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C <sup>(1)</sup> ? <b>NOTE:</b> If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			once
Were all samples received intact <sup>(1)</sup> ?	-			
Was adequate sample volume provided <sup>(1)</sup> ?	-			
If custody seals are present, are they intact <sup>(1)</sup> ?	-			
Are samples due within 48 hours present?	-			Saturday
Are water samples with short hold times present? <b>NOTE:</b> 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			-	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	-			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	-			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	-			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	-			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			-	
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.			-	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any):				

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



Custodian Printed Name

4/13/22

Date/Time



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. NWALL 2FT**  
**2204188-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFD0274	04/13/22	04/13/22	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	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.66</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>C10-C28 (DRO)</b>	<b>430</b>	50	mg/kg	1	BFD0275	04/13/22	04/13/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. NWALL 2FT**  
**2204188-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/14/22	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	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0444</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.00875</b>	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.124</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0233</b>	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.418</b>	0.0500	"	10	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.304</b>	0.0500	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		43.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.9 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0590</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/17/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. NWALL 2FT**  
**2204188-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.26	0.205	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	69.8	0.410	"	"	"	"	"	"
Cadmium	ND	0.205	"	"	"	"	"	"
Copper	3.31	0.410	"	"	"	"	"	"
Lead	3.03	0.205	"	"	"	"	"	"
Nickel	4.27	0.410	"	"	"	"	"	"
Selenium	0.486	0.266	"	"	"	"	"	"
Silver	ND	0.0205	"	"	"	"	"	"
Zinc	17.0	0.410	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.9	0.0512	mg/L dry	1	BFD0325	04/15/22	04/19/22	EPA 6020B	
Magnesium	5.96	0.0512	"	"	"	"	"	"	
Sodium	10.3	0.0512	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.475	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. NWALL 2FT**  
**2204188-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	97.6			%	1	BFD0286	04/14/22	04/14/22	Calculation	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.383	0.0100		mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.64			pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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PO Box 1289  
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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. EWALL 2FT**  
**2204188-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0274	04/13/22	04/13/22	EPA 8260B	
<b>Toluene</b>	<b>0.0068</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.021</b>	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.021</b>	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.012</b>	0.0038	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.6</b>	0.50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.9 %	50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		108 %	50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		113 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>74</b>	50	mg/kg	1	BFD0275	04/13/22	04/14/22	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>ND</b>	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		105 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. EWALL 2FT**  
**2204188-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Acenaphthene</b>	<b>0.00879</b>	0.00500	mg/kg	1	BFD0279	04/14/22	04/14/22	EPA 8270D SIM	
<b>Anthracene</b>	<b>0.0970</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (a) anthracene</b>	<b>0.0166</b>	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0153</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0482</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.00768</b>	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.255</b>	0.0500	"	10	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.245</b>	0.0500	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		52.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.4 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.109</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/17/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. EWALL 2FT**  
**2204188-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.61	0.226	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	87.8	0.452	"	"	"	"	"	"
Cadmium	ND	0.226	"	"	"	"	"	"
Copper	8.50	0.452	"	"	"	"	"	"
Lead	8.18	0.226	"	"	"	"	"	"
Nickel	9.62	0.452	"	"	"	"	"	"
Selenium	0.788	0.294	"	"	"	"	"	"
Silver	0.0295	0.0226	"	"	"	"	"	"
Zinc	53.8	0.452	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	82.7	0.0565	mg/L dry	1	BFD0325	04/15/22	04/19/22	EPA 6020B	
Magnesium	34.4	0.0565	"	"	"	"	"	"	
Sodium	48.1	0.0565	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.12	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. EWALL 2FT**  
**2204188-02 (Soil)**

**Summit Scientific**

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

% Solids	88.4	%	1	BFD0286	04/14/22	04/14/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.54	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.71		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. MID 2FT**  
**2204188-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0274	04/13/22	04/13/22	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	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.92</b>	0.50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0275	04/13/22	04/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

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

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. MID 2FT**  
**2204188-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	EPA 8270D SIM	
<b>Anthracene</b>	<b>0.00566</b>	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: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.5 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0913</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/17/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. MID 2FT**  
**2204188-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.57	0.229	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	95.7	0.457	"	"	"	"	"	"
Cadmium	ND	0.229	"	"	"	"	"	"
Copper	5.85	0.457	"	"	"	"	"	"
Lead	6.87	0.229	"	"	"	"	"	"
Nickel	7.94	0.457	"	"	"	"	"	"
Selenium	0.647	0.297	"	"	"	"	"	"
Silver	ND	0.0229	"	"	"	"	"	"
Zinc	34.5	0.457	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	16.8	0.0571	mg/L dry	1	BFD0325	04/15/22	04/19/22	EPA 6020B	
Magnesium	7.59	0.0571	"	"	"	"	"	"	
Sodium	4.71	0.0571	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.240	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. MID 2FT**  
**2204188-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5		%	1	BFD0286	04/14/22	04/14/22	Calculation	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.230	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.95		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. WWALL 3FT**  
**2204188-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0274	04/13/22	04/13/22	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: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		97.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0275	04/13/22	04/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. WWALL 3FT**  
**2204188-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	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: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		59.7 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0720</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/17/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**N. EX. WWALL 3FT**  
**2204188-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.56	0.227	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	82.9	0.454	"	"	"	"	"	"
Cadmium	ND	0.227	"	"	"	"	"	"
Copper	5.78	0.454	"	"	"	"	"	"
Lead	6.41	0.227	"	"	"	"	"	"
Nickel	7.81	0.454	"	"	"	"	"	"
Selenium	0.701	0.295	"	"	"	"	"	"
Silver	ND	0.0227	"	"	"	"	"	"
Zinc	36.7	0.454	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.3	0.0567	mg/L dry	1	BFD0325	04/15/22	04/19/22	EPA 6020B	
Magnesium	6.88	0.0567	"	"	"	"	"	"	
Sodium	3.43	0.0567	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.176	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

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04/20/22 13:46

**N. EX. WWALL 3FT**  
**2204188-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.1		%	1	BFD0286	04/14/22	04/14/22	Calculation	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.196	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.95		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT NWALL 5FT**  
**2204188-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	<b>0.016</b>	0.0020	mg/kg	1	BFD0274	04/13/22	04/13/22	EPA 8260B	
Toluene	<b>0.30</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	<b>0.27</b>	0.0050	"	"	"	"	"	"	
Xylenes (total)	<b>1.3</b>	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	<b>0.57</b>	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	<b>0.14</b>	0.0050	"	"	"	"	"	"	
Naphthalene	<b>0.19</b>	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	<b>29</b>	0.50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		148 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	<b>2100</b>	50	mg/kg	1	BFD0275	04/13/22	04/14/22	EPA 8015M	
C28-C36 (ORO)	<b>150</b>	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		128 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT NWALL 5FT**  
**2204188-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	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: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.8 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.149</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/17/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT NWALL 5FT**  
**2204188-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.45	0.241	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	90.7	0.483	"	"	"	"	"	"
Cadmium	ND	0.241	"	"	"	"	"	"
Copper	6.51	0.483	"	"	"	"	"	"
Lead	9.88	0.241	"	"	"	"	"	"
Nickel	7.83	0.483	"	"	"	"	"	"
Selenium	0.728	0.314	"	"	"	"	"	"
Silver	0.0308	0.0241	"	"	"	"	"	"
Zinc	38.8	0.483	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	61.6	0.0603	mg/L dry	1	BFD0325	04/15/22	04/19/22	EPA 6020B	
Magnesium	28.9	0.0603	"	"	"	"	"	"	
Sodium	74.0	0.0603	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.95	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT NWALL 5FT**  
**2204188-05 (Soil)**

**Summit Scientific**

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

% Solids	82.9	%	1	BFD0286	04/14/22	04/14/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.16	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.82		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT SWALL 5FT**  
**2204188-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>Benzene</b>	<b>0.0097</b>	0.0020	mg/kg	1	BFD0274	04/13/22	04/13/22	EPA 8260B	
<b>Toluene</b>	<b>0.0073</b>	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	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>3.8</b>	0.50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0275	04/13/22	04/13/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		90.1 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT SWALL 5FT**  
**2204188-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	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	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0520</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.136</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0415</b>	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>1.74</b>	0.0500	"	10	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>1.67</b>	0.0500	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		147 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.0 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.158</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/17/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT SWALL 5FT**  
**2204188-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	5.85	0.232	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	109	0.464	"	"	"	"	"	"
Cadmium	ND	0.232	"	"	"	"	"	"
Copper	6.77	0.464	"	"	"	"	"	"
Lead	7.68	0.232	"	"	"	"	"	"
Nickel	7.15	0.464	"	"	"	"	"	"
Selenium	0.773	0.302	"	"	"	"	"	"
Silver	0.0303	0.0232	"	"	"	"	"	"
Zinc	32.6	0.464	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	20.2	0.0580	mg/L dry	1	BFD0325	04/15/22	04/19/22	EPA 6020B	
Magnesium	7.73	0.0580	"	"	"	"	"	"	
Sodium	29.6	0.0580	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.42	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT SWALL 5FT**  
**2204188-06 (Soil)**

**Summit Scientific**

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

% Solids	86.2	%	1	BFD0286	04/14/22	04/14/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.355	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT EWALL 5FT**  
**2204188-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0078	0.0020	mg/kg	1	BFD0274	04/13/22	04/13/22	EPA 8260B	
Toluene	0.019	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0084	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.036	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.021	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.0053	0.0050	"	"	"	"	"	"	
Naphthalene	0.0065	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.3	0.50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0275	04/13/22	04/13/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.1 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT EWALL 5FT**  
**2204188-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	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: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		59.8 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.155</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/17/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PO Box 1289  
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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT EWALL 5FT**  
**2204188-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.09	0.242	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	82.3	0.483	"	"	"	"	"	"
Cadmium	ND	0.242	"	"	"	"	"	"
Copper	7.15	0.483	"	"	"	"	"	"
Lead	7.12	0.242	"	"	"	"	"	"
Nickel	8.35	0.483	"	"	"	"	"	"
Selenium	0.812	0.314	"	"	"	"	"	"
Silver	0.0276	0.0242	"	"	"	"	"	"
Zinc	38.4	0.483	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	26.7	0.0604	mg/L dry	1	BFD0325	04/15/22	04/19/22	EPA 6020B	
Magnesium	12.6	0.0604	"	"	"	"	"	"	
Sodium	48.9	0.0604	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.95	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT EWALL 5FT**  
**2204188-07 (Soil)**

**Summit Scientific**

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

% Solids	82.8	%	1	BFD0286	04/14/22	04/14/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.590</b>	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>7.92</b>		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT WWALL 5FT**  
**2204188-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.023	0.0020	mg/kg	1	BFD0274	04/13/22	04/13/22	EPA 8260B	
Toluene	0.083	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.021	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.082	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.031	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.0075	0.0050	"	"	"	"	"	"	
Naphthalene	0.0066	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.4	0.50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0275	04/13/22	04/13/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		98.6 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT WWALL 5FT**  
**2204188-08 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.00741</b>	0.00500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.00723</b>	0.00500	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.8 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.150</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/18/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT WWALL 5FT**  
**2204188-08 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.13	0.262	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	173	0.524	"	"	"	"	"	"
Cadmium	ND	0.262	"	"	"	"	"	"
Copper	5.53	0.524	"	"	"	"	"	"
Lead	7.03	0.262	"	"	"	"	"	"
Nickel	8.34	0.524	"	"	"	"	"	"
Selenium	0.761	0.341	"	"	"	"	"	"
Silver	0.0297	0.0262	"	"	"	"	"	"
Zinc	35.5	0.524	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.4	0.0655	mg/L dry	1	BFD0325	04/15/22	04/19/22	EPA 6020B	
Magnesium	10.4	0.0655	"	"	"	"	"	"	
Sodium	43.4	0.0655	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.83	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT WWALL 5FT**  
**2204188-08 (Soil)**

**Summit Scientific**

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

% Solids	76.3	%	1	BFD0286	04/14/22	04/14/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.460	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.99		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT FLOOR 7FT**  
**2204188-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0274	04/13/22	04/13/22	EPA 8260B	
<b>Toluene</b>	<b>0.019</b>	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.0077</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.029</b>	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.012</b>	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.4</b>	0.50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		98.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0275	04/13/22	04/13/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		86.4 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT FLOOR 7FT**  
**2204188-09 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	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: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		54.2 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.161</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/18/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT FLOOR 7FT**  
**2204188-09 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	13.7	0.255	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	93.7	0.509	"	"	"	"	"	"
Cadmium	ND	0.255	"	"	"	"	"	"
Copper	19.3	0.509	"	"	"	"	"	"
Lead	23.6	0.255	"	"	"	"	"	"
Nickel	9.94	0.509	"	"	"	"	"	"
Selenium	0.885	0.331	"	"	"	"	"	"
Silver	0.0800	0.0255	"	"	"	"	"	"
Zinc	11.7	0.509	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.3	0.0637	mg/L dry	1	BFD0325	04/15/22	04/20/22	EPA 6020B	
Magnesium	19.4	0.0637	"	"	"	"	"	"	
Sodium	55.4	0.0637	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.76	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**E PIT FLOOR 7FT**  
**2204188-09 (Soil)**

**Summit Scientific**

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

% Solids	78.5	%	1	BFD0286	04/14/22	04/14/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.783	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.60		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT NWALL 5FT**  
**2204188-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>Benzene</b>	<b>0.085</b>	0.0020	mg/kg	1	BFD0274	04/13/22	04/13/22	EPA 8260B	
<b>Toluene</b>	<b>0.087</b>	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.014</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.060</b>	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.017</b>	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.0045</b>	0.0038	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.6</b>	0.50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0275	04/13/22	04/13/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		85.5 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT NWALL 5FT**  
**2204188-10 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	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: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		42.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.4 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>1.60</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/18/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT NWALL 5FT**  
**2204188-10 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	6.43	0.235	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	109	0.471	"	"	"	"	"	"
Cadmium	ND	0.235	"	"	"	"	"	"
Copper	7.35	0.471	"	"	"	"	"	"
Lead	9.55	0.235	"	"	"	"	"	"
Nickel	12.2	0.471	"	"	"	"	"	"
Selenium	0.963	0.306	"	"	"	"	"	"
Silver	0.0644	0.0235	"	"	"	"	"	"
Zinc	43.7	0.471	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	183	0.0588	mg/L dry	1	BFD0325	04/15/22	04/20/22	EPA 6020B	
Magnesium	75.6	0.0588	"	"	"	"	"	"	
Sodium	1370	0.0588	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	21.5	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT NWALL 5FT**  
**2204188-10 (Soil)**

**Summit Scientific**

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

% Solids	85.0	%	1	BFD0286	04/14/22	04/14/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.13	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.69		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT SWALL 5FT**  
**2204188-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.55	0.0020	mg/kg	1	BFD0274	04/13/22	04/13/22	EPA 8260B	
Toluene	0.34	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.023	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.087	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.011	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	0.0059	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.2	0.50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0275	04/13/22	04/13/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.4 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT SWALL 5FT**  
**2204188-11 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	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: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		56.7 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>1.27</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/18/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT SWALL 5FT**  
**2204188-11 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	5.44	0.246	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	85.9	0.493	"	"	"	"	"	"
Cadmium	ND	0.246	"	"	"	"	"	"
Copper	8.22	0.493	"	"	"	"	"	"
Lead	7.95	0.246	"	"	"	"	"	"
Nickel	8.87	0.493	"	"	"	"	"	"
Selenium	0.909	0.320	"	"	"	"	"	"
Silver	0.0371	0.0246	"	"	"	"	"	"
Zinc	44.1	0.493	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	107	0.0616	mg/L dry	1	BFD0325	04/15/22	04/20/22	EPA 6020B	
Magnesium	32.8	0.0616	"	"	"	"	"	"	
Sodium	2250	0.0616	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	48.8	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT SWALL 5FT**  
**2204188-11 (Soil)**

**Summit Scientific**

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

% Solids	81.2	%	1	BFD0286	04/14/22	04/14/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.78	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.79		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT EWALL 5FT**  
**2204188-12 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.24	0.0020	mg/kg	1	BFD0274	04/13/22	04/14/22	EPA 8260B	
Toluene	0.22	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.024	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.093	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.021	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.0050	0.0050	"	"	"	"	"	"	
Naphthalene	0.0062	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.3	0.50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		93.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0275	04/13/22	04/13/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		81.8 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT EWALL 5FT**  
**2204188-12 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	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: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.8 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.148</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/18/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PO Box 1289  
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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT EWALL 5FT**  
**2204188-12 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	7.88	0.239	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	77.3	0.478	"	"	"	"	"	"
Cadmium	ND	0.239	"	"	"	"	"	"
Copper	8.37	0.478	"	"	"	"	"	"
Lead	9.10	0.239	"	"	"	"	"	"
Nickel	7.55	0.478	"	"	"	"	"	"
Selenium	0.799	0.311	"	"	"	"	"	"
Silver	0.0364	0.0239	"	"	"	"	"	"
Zinc	42.0	0.478	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	98.4	0.0598	mg/L dry	1	BFD0325	04/15/22	04/20/22	EPA 6020B	
Magnesium	50.3	0.0598	"	"	"	"	"	"	
Sodium	173	0.0598	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.54	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PO Box 1289  
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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT EWALL 5FT**  
**2204188-12 (Soil)**

**Summit Scientific**

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

% Solids	83.6	%	1	BFD0286	04/14/22	04/14/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.41	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.89		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT WWALL 5FT  
2204188-13 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	1.6	0.020	mg/kg	10	BFD0274	04/13/22	04/14/22	EPA 8260B	
Toluene	7.0	0.050	"	"	"	"	"	"	
Ethylbenzene	2.2	0.050	"	"	"	"	"	"	
Xylenes (total)	8.3	0.10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	3.3	0.050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.81	0.050	"	"	"	"	"	"	
Naphthalene	0.78	0.038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	320	5.0	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		132 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0275	04/13/22	04/13/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		86.2 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT WWALL 5FT**  
**2204188-13 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	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	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0334</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.109</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0213</b>	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.708</b>	0.0500	"	10	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.712</b>	0.0500	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.7 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.466</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/18/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT WWALL 5FT  
2204188-13 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	5.19	0.231	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	108	0.463	"	"	"	"	"	"
Cadmium	ND	0.231	"	"	"	"	"	"
Copper	5.53	0.463	"	"	"	"	"	"
Lead	7.55	0.231	"	"	"	"	"	"
Nickel	8.86	0.463	"	"	"	"	"	"
Selenium	0.762	0.301	"	"	"	"	"	"
Silver	0.0293	0.0231	"	"	"	"	"	"
Zinc	35.4	0.463	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	176	0.0578	mg/L dry	1	BFD0325	04/15/22	04/20/22	EPA 6020B	
Magnesium	88.3	0.0578	"	"	"	"	"	"	
Sodium	692	0.0578	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.6	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental  
PO Box 1289  
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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT WWALL 5FT  
2204188-13 (Soil)**

**Summit Scientific**

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

% Solids	86.4	%	1	BFD0286	04/14/22	04/14/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	7.35	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.70		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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Fremont Environmental  
PO Box 1289  
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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT FLOOR 7FT**  
**2204188-14 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.0066</b>	0.0020	mg/kg	1	BFD0274	04/13/22	04/14/22	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	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.57</b>	0.50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0275	04/13/22	04/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.5 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT FLOOR 7FT**  
**2204188-14 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0279	04/14/22	04/15/22	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: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.1 %	40-150		"	"	"	"	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.179</b>	0.0100	mg/L	1	BFD0283	04/14/22	04/18/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/12/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT FLOOR 7FT**  
**2204188-14 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	31.0	0.252	mg/kg dry	1	BFD0292	04/14/22	04/19/22	EPA 6020B
Barium	39.0	0.505	"	"	"	"	"	"
Cadmium	ND	0.252	"	"	"	"	"	"
Copper	18.3	0.505	"	"	"	"	"	"
Lead	13.0	0.252	"	"	"	"	"	"
Nickel	6.59	0.505	"	"	"	"	"	"
Selenium	0.657	0.328	"	"	"	"	"	"
Silver	0.0809	0.0252	"	"	"	"	"	"
Zinc	27.7	0.505	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0405	04/20/22	04/20/22	EPA 7196A	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	41.9	0.0631	mg/L dry	1	BFD0325	04/15/22	04/20/22	EPA 6020B	
Magnesium	19.1	0.0631	"	"	"	"	"	"	
Sodium	60.2	0.0631	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.94	0.00100	units	1	BFD0417	04/20/22	04/20/22	Calculation	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**WPIT FLOOR 7FT**  
**2204188-14 (Soil)**

**Summit Scientific**

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

% Solids	79.3	%	1	BFD0286	04/14/22	04/14/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.868	0.0100	mmhos/cm	1	BFD0340	04/18/22	04/18/22	EPA 120.1	

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

Date Sampled: **04/12/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.79		pH Units	1	BFD0341	04/18/22	04/18/22	EPA 9045D	

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

## 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 BFD0274 - EPA 5030 Soil MS

##### Blank (BFD0274-BLK1)

Prepared: 04/13/22 Analyzed: 04/14/22

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	0.0580		"	0.0400		145	50-150			
Surrogate: Toluene-d8	0.0421		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400		105	50-150			

##### LCS (BFD0274-BS1)

Prepared: 04/13/22 Analyzed: 04/14/22

Benzene	0.0982	0.0020	mg/kg	0.100		98.2	70-130			
Toluene	0.103	0.0050	"	0.100		103	70-130			
Ethylbenzene	0.0966	0.0050	"	0.100		96.6	70-130			
m,p-Xylene	0.203	0.010	"	0.200		102	70-130			
o-Xylene	0.101	0.0050	"	0.100		101	70-130			
1,2,4-Trimethylbenzene	0.107	0.0050	"	0.100		107	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.110	0.0038	"	0.100		110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0588		"	0.0400		147	50-150			
Surrogate: Toluene-d8	0.0419		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0438		"	0.0400		109	50-150			

##### Matrix Spike (BFD0274-MS1)

Source: 2204185-01

Prepared: 04/13/22 Analyzed: 04/14/22

Benzene	0.105	0.0020	mg/kg	0.100	ND	105	70-130			
Toluene	0.109	0.0050	"	0.100	ND	109	70-130			
Ethylbenzene	0.0975	0.0050	"	0.100	ND	97.5	70-130			
m,p-Xylene	0.203	0.010	"	0.200	ND	101	70-130			
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130			
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130			
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130			
Naphthalene	0.106	0.0038	"	0.100	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0363		"	0.0400		90.7	50-150			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0445		"	0.0400		111	50-150			

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

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04/20/22 13:46

## 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 BFD0274 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0274-MSD1)	Source: 2204185-01			Prepared: 04/13/22 Analyzed: 04/14/22						
Benzene	0.0953	0.0020	mg/kg	0.100	ND	95.3	70-130	9.53	30	
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	5.05	30	
Ethylbenzene	0.0958	0.0050	"	0.100	ND	95.8	70-130	1.77	30	
m,p-Xylene	0.200	0.010	"	0.200	ND	99.8	70-130	1.43	30	
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	1.91	30	
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	1.70	30	
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	0.881	30	
Naphthalene	0.128	0.0038	"	0.100	ND	128	70-130	18.6	30	
Surrogate: 1,2-Dichloroethane-d4	0.0323		"	0.0400		80.8	50-150			
Surrogate: Toluene-d8	0.0418		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0444		"	0.0400		111	50-150			

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

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

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

**Batch BFD0275 - EPA 3550A**

**Blank (BFD0275-BLK1)**

Prepared: 04/13/22 Analyzed: 04/14/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

**LCS (BFD0275-BS1)**

Prepared: 04/13/22 Analyzed: 04/14/22

C10-C28 (DRO)	475	50	mg/kg	500	95.0	70-130
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**Matrix Spike (BFD0275-MS1)**

Source: 2204185-01

Prepared: 04/13/22 Analyzed: 04/14/22

C10-C28 (DRO)	420	50	mg/kg	500	29.1	78.2	70-130
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**Matrix Spike Dup (BFD0275-MSD1)**

Source: 2204185-01

Prepared: 04/13/22 Analyzed: 04/14/22

C10-C28 (DRO)	401	50	mg/kg	500	29.1	74.3	70-130	4.78	20
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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

## 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 BFD0279 - EPA 5030 Soil MS

##### Blank (BFD0279-BLK1)

Prepared & Analyzed: 04/14/22

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	0.0168		"	0.0333		50.3	40-150			
Surrogate: Fluoranthene-d10	0.0180		"	0.0333		53.9	40-150			

##### LCS (BFD0279-BS1)

Prepared & Analyzed: 04/14/22

Acenaphthene	0.0210	0.00500	mg/kg	0.0333		62.9	31-137			
Anthracene	0.0227	0.00500	"	0.0333		68.2	30-120			
Benzo (a) anthracene	0.0218	0.00500	"	0.0333		65.5	30-120			
Benzo (a) pyrene	0.0209	0.00500	"	0.0333		62.8	30-120			
Benzo (b) fluoranthene	0.0206	0.00500	"	0.0333		61.9	30-120			
Benzo (k) fluoranthene	0.0209	0.00500	"	0.0333		62.7	30-120			
Chrysene	0.0211	0.00500	"	0.0333		63.2	30-120			
Dibenz (a,h) anthracene	0.0206	0.00500	"	0.0333		61.9	30-120			
Fluoranthene	0.0224	0.00500	"	0.0333		67.3	30-120			
Fluorene	0.0217	0.00500	"	0.0333		65.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0198	0.00500	"	0.0333		59.4	30-120			
Pyrene	0.0220	0.00500	"	0.0333		65.9	35-142			
1-Methylnaphthalene	0.0228	0.00500	"	0.0333		68.2	35-142			
2-Methylnaphthalene	0.0202	0.00500	"	0.0333		60.6	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0217		"	0.0333		65.2	40-150			
Surrogate: Fluoranthene-d10	0.0225		"	0.0333		67.4	40-150			

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

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04/20/22 13:46

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

### Summit Scientific

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

#### Batch BFD0279 - EPA 5030 Soil MS

##### Matrix Spike (BFD0279-MS1)

Source: 2204147-01

Prepared & Analyzed: 04/14/22

Acenaphthene	0.0217	0.00500	mg/kg	0.0333	ND	65.1	31-137				
Anthracene	0.0221	0.00500	"	0.0333	ND	66.2	30-120				
Benzo (a) anthracene	0.0234	0.00500	"	0.0333	ND	70.2	30-120				
Benzo (a) pyrene	0.0215	0.00500	"	0.0333	ND	64.5	30-120				
Benzo (b) fluoranthene	0.0253	0.00500	"	0.0333	ND	75.9	30-120				
Benzo (k) fluoranthene	0.0244	0.00500	"	0.0333	ND	73.2	30-120				
Chrysene	0.0239	0.00500	"	0.0333	ND	71.7	30-120				
Dibenz (a,h) anthracene	0.0115	0.00500	"	0.0333	ND	34.5	30-120				
Fluoranthene	0.0227	0.00500	"	0.0333	ND	68.0	30-120				
Fluorene	0.0214	0.00500	"	0.0333	ND	64.1	30-120				
Indeno (1,2,3-cd) pyrene	0.0144	0.00500	"	0.0333	ND	43.1	30-120				
Pyrene	0.0304	0.00500	"	0.0333	ND	91.1	35-142				
1-Methylnaphthalene	0.0209	0.00500	"	0.0333	ND	62.6	15-130				
2-Methylnaphthalene	0.0207	0.00500	"	0.0333	ND	62.0	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0213		"	0.0333		63.8	40-150				
Surrogate: Fluoranthene-d10	0.0226		"	0.0333		67.8	40-150				

##### Matrix Spike Dup (BFD0279-MSD1)

Source: 2204147-01

Prepared & Analyzed: 04/14/22

Acenaphthene	0.0202	0.00500	mg/kg	0.0333	ND	60.6	31-137	7.14	30		
Anthracene	0.0210	0.00500	"	0.0333	ND	63.1	30-120	4.85	30		
Benzo (a) anthracene	0.0221	0.00500	"	0.0333	ND	66.2	30-120	5.90	30		
Benzo (a) pyrene	0.0201	0.00500	"	0.0333	ND	60.4	30-120	6.56	30		
Benzo (b) fluoranthene	0.0239	0.00500	"	0.0333	ND	71.6	30-120	5.83	30		
Benzo (k) fluoranthene	0.0229	0.00500	"	0.0333	ND	68.7	30-120	6.33	30		
Chrysene	0.0220	0.00500	"	0.0333	ND	65.9	30-120	8.44	30		
Dibenz (a,h) anthracene	0.0106	0.00500	"	0.0333	ND	31.9	30-120	7.73	30		
Fluoranthene	0.0211	0.00500	"	0.0333	ND	63.2	30-120	7.28	30		
Fluorene	0.0208	0.00500	"	0.0333	ND	62.4	30-120	2.77	30		
Indeno (1,2,3-cd) pyrene	0.0134	0.00500	"	0.0333	ND	40.2	30-120	6.85	30		
Pyrene	0.0259	0.00500	"	0.0333	ND	77.7	35-142	15.9	30		
1-Methylnaphthalene	0.0203	0.00500	"	0.0333	ND	61.0	15-130	2.64	50		
2-Methylnaphthalene	0.0190	0.00500	"	0.0333	ND	56.9	15-130	8.58	50		
Surrogate: 2-Methylnaphthalene-d10	0.0193		"	0.0333		57.9	40-150				
Surrogate: Fluoranthene-d10	0.0216		"	0.0333		64.8	40-150				

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**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 BFD0283 - EPA 3050B**

**Blank (BFD0283-BLK1)**

Prepared: 04/14/22 Analyzed: 04/17/22

Boron ND 0.0100 mg/L

**LCS (BFD0283-BS1)**

Prepared: 04/14/22 Analyzed: 04/17/22

Boron 5.46 0.0100 mg/L 5.00 109 80-120

**Duplicate (BFD0283-DUP1)**

**Source: 2204140-01**

Prepared: 04/14/22 Analyzed: 04/17/22

Boron 0.105 0.0100 mg/L 0.107 2.05 20

**Matrix Spike (BFD0283-MS1)**

**Source: 2204140-01**

Prepared: 04/14/22 Analyzed: 04/17/22

Boron 5.37 0.0100 mg/L 5.00 0.107 105 75-125

**Matrix Spike Dup (BFD0283-MSD1)**

**Source: 2204140-01**

Prepared: 04/14/22 Analyzed: 04/17/22

Boron 4.96 0.0100 mg/L 5.00 0.107 97.1 75-125 7.79 25

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

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

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

**Batch BFD0292 - EPA 3050B**

**Blank (BFD0292-BLK1)**

Prepared: 04/14/22 Analyzed: 04/19/22

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

**LCS (BFD0292-BS1)**

Prepared: 04/14/22 Analyzed: 04/19/22

Arsenic	42.2	0.200	mg/kg wet	40.0	105	80-120
Barium	36.6	0.400	"	40.0	91.6	80-120
Cadmium	1.83	0.200	"	2.00	91.7	80-120
Copper	38.0	0.400	"	40.0	95.0	80-120
Lead	16.9	0.200	"	20.0	84.5	80-120
Nickel	37.9	0.400	"	40.0	94.7	80-120
Selenium	3.60	0.260	"	4.00	90.0	80-120
Silver	1.78	0.0200	"	2.00	88.9	80-120
Zinc	40.8	0.400	"	40.0	102	80-120

**Duplicate (BFD0292-DUP1)**

Source: 2203539-05

Prepared: 04/14/22 Analyzed: 04/19/22

Arsenic	0.546	0.236	mg/kg dry	0.588	7.38	20
Barium	13.7	0.472	"	13.5	1.52	20
Cadmium	0.0194	0.236	"	0.0179	7.88	20
Copper	1.34	0.472	"	1.32	1.94	20
Lead	3.03	0.236	"	2.94	2.86	20
Nickel	1.94	0.472	"	1.98	1.96	20
Selenium	0.333	0.307	"	0.316	5.32	20
Silver	0.00839	0.0236	"	0.00758	10.1	20
Zinc	10.1	0.472	"	10.0	0.190	20

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**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 BFD0292 - EPA 3050B**

**Matrix Spike (BFD0292-MS1)**

**Source: 2203539-05**

Prepared: 04/14/22 Analyzed: 04/19/22

Arsenic	45.4	0.236	mg/kg dry	47.2	0.588	95.1	75-125
Barium	52.5	0.472	"	47.2	13.5	82.6	75-125
Cadmium	2.03	0.236	"	2.36	0.0179	85.3	75-125
Copper	41.4	0.472	"	47.2	1.32	84.9	75-125
Lead	20.7	0.236	"	23.6	2.94	75.3	75-125
Nickel	41.7	0.472	"	47.2	1.98	84.2	75-125
Selenium	3.86	0.307	"	4.72	0.316	75.2	75-125
Silver	1.91	0.0236	"	2.36	0.00758	80.8	75-125
Zinc	52.4	0.472	"	47.2	10.0	89.7	75-125

**Matrix Spike Dup (BFD0292-MSD1)**

**Source: 2203539-05**

Prepared: 04/14/22 Analyzed: 04/19/22

Arsenic	46.7	0.236	mg/kg dry	47.2	0.588	97.8	75-125	2.86	25
Barium	53.1	0.472	"	47.2	13.5	84.0	75-125	1.17	25
Cadmium	2.05	0.236	"	2.36	0.0179	86.3	75-125	1.14	25
Copper	43.2	0.472	"	47.2	1.32	88.8	75-125	4.31	25
Lead	20.9	0.236	"	23.6	2.94	76.1	75-125	0.973	25
Nickel	43.0	0.472	"	47.2	1.98	87.0	75-125	3.04	25
Selenium	4.13	0.307	"	4.72	0.316	80.9	75-125	6.69	25
Silver	1.92	0.0236	"	2.36	0.00758	81.2	75-125	0.590	25
Zinc	54.2	0.472	"	47.2	10.0	93.7	75-125	3.50	25

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**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 BFD0405 - 3060A Mod**

**Blank (BFD0405-BLK1)**

Prepared & Analyzed: 04/20/22

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BFD0405-BS1)**

Prepared & Analyzed: 04/20/22

Chromium, Hexavalent 29.4 0.30 mg/kg wet 25.0 117 80-120

**Duplicate (BFD0405-DUP1)**

**Source: 2204188-01**

Prepared & Analyzed: 04/20/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BFD0405-MS1)**

**Source: 2204188-01**

Prepared & Analyzed: 04/20/22

Chromium, Hexavalent 26.2 0.30 mg/kg dry 25.6 ND 102 75-125

**Matrix Spike Dup (BFD0405-MSD1)**

**Source: 2204188-01**

Prepared & Analyzed: 04/20/22

Chromium, Hexavalent 28.3 0.30 mg/kg dry 25.6 ND 110 75-125 7.71 20

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**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 BFD0325 - General Preparation**

**Blank (BFD0325-BLK1)**

Prepared: 04/15/22 Analyzed: 04/19/22

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

**LCS (BFD0325-BS1)**

Prepared: 04/15/22 Analyzed: 04/19/22

Calcium	5.25	0.0500	mg/L wet	5.00	105	70-130
Magnesium	6.38	0.0500	"	5.00	128	70-130
Sodium	5.38	0.0500	"	5.00	108	70-130

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**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 BFD0286 - General Preparation**

**Duplicate (BFD0286-DUP1)**

**Source: 2204141-01**

**Prepared & Analyzed: 04/14/22**

% Solids	72.7	%		73.0		0.421	20
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Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**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 BFD0340 - General Preparation**

**Blank (BFD0340-BLK1)**

Prepared & Analyzed: 04/18/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BFD0340-BS1)**

Prepared & Analyzed: 04/18/22

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

**Duplicate (BFD0340-DUP1)**

**Source: 2204102-01**

Prepared & Analyzed: 04/18/22

Specific Conductance (EC) 0.675 0.0100 mmhos/cm 0.681 0.915 20

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

**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 BFD0341 - General Preparation**

**LCS (BFD0341-BS1)**

Prepared & Analyzed: 04/18/22

pH	9.04	pH Units	9.18	98.5	95-105
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**Duplicate (BFD0341-DUP1)**

Source: 2204102-01

Prepared & Analyzed: 04/18/22

pH	7.77	pH Units	7.55	2.87	20
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Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
04/20/22 13:46

### Notes and Definitions

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



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 06, 2022

Paul Henchan  
Fremont Environmental  
PO Box 1289  
Wellington, CO 80549  
RE: Noble - Wells Ranch AE20  
Work Order #2204345

Enclosed are the results of analyses for samples received by Summit Scientific on 04/22/22 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W PIT-W WALL 6FT	2204345-01	Soil	04/21/22 00:00	04/22/22 15:00
METER-W WALL 2FT	2204345-02	Soil	04/21/22 00:00	04/22/22 15:00
METER-FLOOR 3FT	2204345-03	Soil	04/21/22 00:00	04/22/22 15:00
E PIT-N WALL 6FT	2204345-04	Soil	04/21/22 00:00	04/22/22 15:00

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.*

2204345

# Summit Scientific

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: Fremont Environmental

Project Manager: Paul Henehan

Address: P.O Box 1289

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

City/State/Zip: Wellington, CO 80549

Bill to: Jacob

Phone: 303-956-8714

Project Name: Noble - Wells Ranch AE20

Sampler Name: Black

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested										Notes:
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN-915	915 Metals BTEX-910	GRO	DRO/ORO	SAR	EC	pH	Boron	PAH-915		
1	W PIT - W WALL 6FT	4/21/22		3			X			X				X	X		X	X	X	X	X		
2	METER - W WALL 2FT	↓		↓										↓	↓		↓	↓	↓	↓	↓		
3	METER - FLOOR 3FT	↓		↓										↓	↓		↓	↓	↓	↓	↓		
4	E PIT - N WALL 6FT	↓		↓										↓	↓		↓	↓	↓	↓	↓		
5																							
6																							
7																							
8																							
9																							
10																							

Relinquished by: Ethan Black	Date/Time: 4/22/22	Received by: 	Date/Time: 4/22/22 1506	<b>Turn Around Time</b> (Check) Same Day _____ 72 hours 24 hours _____ Standard _____ 48 hours _____ <b>Sample Integrity:</b> Temperature Upon Receipt: 40 Samples Intact: Yes No
Relinquished by:	Date/Time:	Received by:	Date/Time:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2204345

Client: Fremont Client Project ID: Noble-Wells Ranch AE 20

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

	-			
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Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 4.0 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C <sup>(1)</sup> ? <b>NOTE:</b> If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on ICE
Were all samples received intact <sup>(1)</sup> ?	-			
Was adequate sample volume provided <sup>(1)</sup> ?	-			
If custody seals are present, are they intact <sup>(1)</sup> ?	✓			
Are samples due within 48 hours present?	-			24 hrs
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			-	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	-			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	-			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	-			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	-			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>			-	
Are samples preserved that require preservation <b>(excluding cooling)</b> <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.			-	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				



Custodian Printed Name

4-22-22

Date/Time



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**W PIT-W WALL 6FT**  
**2204345-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0507	04/22/22	04/23/22	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: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0424	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0421	105 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0508	04/22/22	04/23/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.8	118 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**W PIT-W WALL 6FT**  
**2204345-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0518	04/25/22	04/28/22	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: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0250	74.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0232	69.5 %	40-150		"	"	"	"	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.235</b>	0.0100	mg/L	1	BFD0513	04/25/22	04/30/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/21/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**W PIT-W WALL 6FT**  
**2204345-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	5.01	0.238	mg/kg dry	1	BFD0538	04/25/22	04/30/22	EPA 6020B
Barium	101	0.475	"	"	"	"	"	"
Cadmium	ND	0.238	"	"	"	"	"	"
Copper	7.12	0.475	"	"	"	"	"	"
Lead	7.75	0.238	"	"	"	"	"	"
Nickel	9.46	0.475	"	"	"	"	"	"
Selenium	0.735	0.309	"	"	"	"	"	"
Silver	0.0378	0.0238	"	"	"	"	"	"
Zinc	37.8	0.475	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0094	05/05/22	05/05/22	EPA 7196A	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	14.5	0.0594	mg/L dry	1	BFD0563	04/26/22	05/03/22	EPA 6020B	
Magnesium	2.94	0.0594	"	"	"	"	"	"	
Sodium	1.00	0.0594	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0626	0.00100	units	1	BFE0069	05/04/22	05/04/22	Calculation	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**W PIT-W WALL 6FT**  
**2204345-01 (Soil)**

**Summit Scientific**

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

% Solids	84.2	%	1	BFD0539	04/25/22	04/25/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.354	0.0100	mmhos/cm	1	BFD0575	04/26/22	04/27/22	EPA 120.1	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.61		pH Units	1	BFD0576	04/26/22	04/27/22	EPA 9045D	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**METER-W WALL 2FT**  
**2204345-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0507	04/22/22	04/23/22	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: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0422	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0508	04/22/22	04/23/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.7	118 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**METER-W WALL 2FT**  
**2204345-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0518	04/25/22	04/28/22	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: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0254	76.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0221	66.4 %	40-150		"	"	"	"	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.171</b>	0.0100	mg/L	1	BFD0513	04/25/22	04/30/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/21/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**METER-W WALL 2FT**  
**2204345-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.48	0.229	mg/kg dry	1	BFD0538	04/25/22	04/30/22	EPA 6020B
Barium	176	0.457	"	"	"	"	"	"
Cadmium	ND	0.229	"	"	"	"	"	"
Copper	4.82	0.457	"	"	"	"	"	"
Lead	5.71	0.229	"	"	"	"	"	"
Nickel	6.64	0.457	"	"	"	"	"	"
Selenium	0.599	0.297	"	"	"	"	"	"
Silver	0.0350	0.0229	"	"	"	"	"	"
Zinc	24.7	0.457	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0094	05/05/22	05/05/22	EPA 7196A	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	10.9	0.0572	mg/L dry	1	BFD0563	04/26/22	05/03/22	EPA 6020B	
Magnesium	1.97	0.0572	"	"	"	"	"	"	
Sodium	0.275	0.0572	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0201	0.00100	units	1	BFE0069	05/04/22	05/04/22	Calculation	

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

Date Sampled: **04/21/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**METER-W WALL 2FT**  
**2204345-02 (Soil)**

**Summit Scientific**

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

% Solids	87.4	%	1	BFD0539	04/25/22	04/25/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.177	0.0100	mmhos/cm	1	BFD0575	04/26/22	04/27/22	EPA 120.1	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.53		pH Units	1	BFD0576	04/26/22	04/27/22	EPA 9045D	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**METER-FLOOR 3FT**  
**2204345-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0507	04/22/22	04/23/22	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: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0385	96.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0508	04/22/22	04/23/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.7	118 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**METER-FLOOR 3FT**  
**2204345-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0518	04/25/22	04/28/22	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: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0241	72.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0223	67.0 %	40-150		"	"	"	"	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.200</b>	0.0100	mg/L	1	BFD0513	04/25/22	04/30/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/21/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**METER-FLOOR 3FT**  
**2204345-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.91	0.229	mg/kg dry	1	BFD0538	04/25/22	05/01/22	EPA 6020B
Barium	73.1	0.457	"	"	"	"	"	"
Cadmium	ND	0.229	"	"	"	"	"	"
Copper	6.25	0.457	"	"	"	"	"	"
Lead	7.00	0.229	"	"	"	"	"	"
Nickel	7.07	0.457	"	"	"	"	"	"
Selenium	0.698	0.297	"	"	"	"	"	"
Silver	0.0307	0.0229	"	"	"	"	"	"
Zinc	36.5	0.457	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0094	05/05/22	05/05/22	EPA 7196A	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.4	0.0572	mg/L dry	1	BFD0563	04/26/22	05/03/22	EPA 6020B	
Magnesium	2.96	0.0572	"	"	"	"	"	"	
Sodium	0.500	0.0572	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0292	0.00100	units	1	BFE0069	05/04/22	05/04/22	Calculation	

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

Date Sampled: **04/21/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**METER-FLOOR 3FT**  
**2204345-03 (Soil)**

**Summit Scientific**

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

% Solids	87.4	%	1	BFD0539	04/25/22	04/25/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.175	0.0100	mmhos/cm	1	BFD0575	04/26/22	04/27/22	EPA 120.1	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.67		pH Units	1	BFD0576	04/26/22	04/27/22	EPA 9045D	

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**E PIT-N WALL 6FT**  
**2204345-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0507	04/22/22	04/23/22	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: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0403	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0396	99.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0417	104 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0508	04/22/22	04/23/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.4	115 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**E PIT-N WALL 6FT**  
**2204345-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0518	04/25/22	04/28/22	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: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0183	55.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0165	49.6 %	40-150		"	"	"	"	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.215</b>	0.0100	mg/L	1	BFD0513	04/25/22	04/30/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/21/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**E PIT-N WALL 6FT**  
**2204345-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.81	0.231	mg/kg dry	1	BFD0538	04/25/22	05/01/22	EPA 6020B
Barium	70.4	0.462	"	"	"	"	"	"
Cadmium	0.389	0.231	"	"	"	"	"	"
Copper	9.73	0.462	"	"	"	"	"	"
Lead	9.14	0.231	"	"	"	"	"	"
Nickel	11.0	0.462	"	"	"	"	"	"
Selenium	1.09	0.300	"	"	"	"	"	"
Silver	0.0396	0.0231	"	"	"	"	"	"
Zinc	55.8	0.462	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0094	05/05/22	05/05/22	EPA 7196A	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	9.49	0.0578	mg/L dry	1	BFD0563	04/26/22	05/03/22	EPA 6020B	
Magnesium	2.34	0.0578	"	"	"	"	"	"	
Sodium	0.943	0.0578	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0711	0.00100	units	1	BFE0069	05/04/22	05/04/22	Calculation	

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

Date Sampled: **04/21/22 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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**E PIT-N WALL 6FT**  
**2204345-04 (Soil)**

**Summit Scientific**

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

% Solids	86.5	%	1	BFD0539	04/25/22	04/25/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.211	0.0100	mmhos/cm	1	BFD0575	04/26/22	04/27/22	EPA 120.1	

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

Date Sampled: **04/21/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.77		pH Units	1	BFD0576	04/26/22	04/27/22	EPA 9045D	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

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

### Summit Scientific

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

#### Batch BFD0507 - EPA 5030 Soil MS

##### Blank (BFD0507-BLK1)

Prepared & Analyzed: 04/22/22

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	0.0394		"	0.0400		98.6	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	50-150			

##### LCS (BFD0507-BS1)

Prepared & Analyzed: 04/22/22

Benzene	0.107	0.0020	mg/kg	0.100		107	70-130			
Toluene	0.101	0.0050	"	0.100		101	70-130			
Ethylbenzene	0.115	0.0050	"	0.100		115	70-130			
m,p-Xylene	0.223	0.010	"	0.200		111	70-130			
o-Xylene	0.106	0.0050	"	0.100		106	70-130			
1,2,4-Trimethylbenzene	0.106	0.0050	"	0.100		106	70-130			
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100		104	70-130			
Naphthalene	0.0952	0.0038	"	0.100		95.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0433		"	0.0400		108	50-150			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	50-150			

##### Matrix Spike (BFD0507-MS1)

Source: 2204344-01

Prepared & Analyzed: 04/22/22

Benzene	0.0945	0.0020	mg/kg	0.100	ND	94.5	70-130			
Toluene	0.0878	0.0050	"	0.100	ND	87.8	70-130			
Ethylbenzene	0.0973	0.0050	"	0.100	ND	97.3	70-130			
m,p-Xylene	0.239	0.010	"	0.200	ND	119	70-130			
o-Xylene	0.113	0.0050	"	0.100	ND	113	70-130			
1,2,4-Trimethylbenzene	0.116	0.0050	"	0.100	ND	116	70-130			
1,3,5-Trimethylbenzene	0.0982	0.0050	"	0.100	ND	98.2	70-130			
Naphthalene	0.100	0.0038	"	0.100	ND	100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0442		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0429		"	0.0400		107	50-150			

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Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

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

### Summit Scientific

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

#### Batch BFD0507 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0507-MSD1)	Source: 2204344-01			Prepared & Analyzed: 04/22/22						
Benzene	0.0922	0.0020	mg/kg	0.100	ND	92.2	70-130	2.51	30	
Toluene	0.0797	0.0050	"	0.100	ND	79.7	70-130	9.74	30	
Ethylbenzene	0.0908	0.0050	"	0.100	ND	90.8	70-130	6.86	30	
m,p-Xylene	0.221	0.010	"	0.200	ND	110	70-130	7.95	30	
o-Xylene	0.0988	0.0050	"	0.100	ND	98.8	70-130	13.0	30	
1,2,4-Trimethylbenzene	0.0929	0.0050	"	0.100	ND	92.9	70-130	21.9	30	
1,3,5-Trimethylbenzene	0.116	0.0050	"	0.100	ND	116	70-130	16.9	30	
Naphthalene	0.0811	0.0038	"	0.100	ND	81.1	70-130	21.0	30	
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0319		"	0.0400		79.8	50-150			

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**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 BFD0508 - EPA 3550A**

**Blank (BFD0508-BLK1)**

Prepared & Analyzed: 04/22/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

**LCS (BFD0508-BS1)**

Prepared & Analyzed: 04/22/22

C10-C28 (DRO)	488	50	mg/kg	500	97.5	70-130
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**Matrix Spike (BFD0508-MS1)**

Source: 2204344-01

Prepared & Analyzed: 04/22/22

C10-C28 (DRO)	468	50	mg/kg	500	43.3	84.9	70-130
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**Matrix Spike Dup (BFD0508-MSD1)**

Source: 2204344-01

Prepared & Analyzed: 04/22/22

C10-C28 (DRO)	442	50	mg/kg	500	43.3	79.7	70-130	5.68	20
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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

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

**Summit Scientific**

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

**Batch BFD0518 - EPA 5030 Soil MS**

**Blank (BFD0518-BLK1)**

Prepared: 04/25/22 Analyzed: 04/27/22

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	0.0263		"	0.0333		78.8	40-150			
Surrogate: Fluoranthene-d10	0.0244		"	0.0333		73.1	40-150			

**LCS (BFD0518-BS1)**

Prepared: 04/25/22 Analyzed: 04/27/22

Acenaphthene	0.0218	0.00500	mg/kg	0.0333		65.5	31-137			
Anthracene	0.0304	0.00500	"	0.0333		91.2	30-120			
Benzo (a) anthracene	0.0313	0.00500	"	0.0333		93.9	30-120			
Benzo (a) pyrene	0.0303	0.00500	"	0.0333		90.8	30-120			
Benzo (b) fluoranthene	0.0317	0.00500	"	0.0333		95.2	30-120			
Benzo (k) fluoranthene	0.0313	0.00500	"	0.0333		94.0	30-120			
Chrysene	0.0316	0.00500	"	0.0333		94.7	30-120			
Dibenz (a,h) anthracene	0.0284	0.00500	"	0.0333		85.3	30-120			
Fluoranthene	0.0314	0.00500	"	0.0333		94.1	30-120			
Fluorene	0.0260	0.00500	"	0.0333		77.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0287	0.00500	"	0.0333		86.1	30-120			
Pyrene	0.0314	0.00500	"	0.0333		94.2	35-142			
1-Methylnaphthalene	0.0265	0.00500	"	0.0333		79.4	35-142			
2-Methylnaphthalene	0.0296	0.00500	"	0.0333		88.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0292		"	0.0333		87.7	40-150			
Surrogate: Fluoranthene-d10	0.0329		"	0.0333		98.6	40-150			

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Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

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

### Summit Scientific

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

#### Batch BFD0518 - EPA 5030 Soil MS

Matrix Spike (BFD0518-MS1)			Source: 2204308-01		Prepared: 04/25/22 Analyzed: 04/27/22					
Acenaphthene	0.0121	0.00500	mg/kg	0.0333	ND	36.3	31-137			
Anthracene	0.0280	0.00500	"	0.0333	ND	83.9	30-120			
Benzo (a) anthracene	0.0224	0.00500	"	0.0333	ND	67.1	30-120			
Benzo (a) pyrene	0.0212	0.00500	"	0.0333	ND	63.7	30-120			
Benzo (b) fluoranthene	0.0240	0.00500	"	0.0333	ND	72.1	30-120			
Benzo (k) fluoranthene	0.0262	0.00500	"	0.0333	ND	78.5	30-120			
Chrysene	0.0321	0.00500	"	0.0333	0.00371	85.1	30-120			
Dibenz (a,h) anthracene	0.0214	0.00500	"	0.0333	ND	64.3	30-120			
Fluoranthene	0.0328	0.00500	"	0.0333	ND	98.5	30-120			
Fluorene	0.0212	0.00500	"	0.0333	ND	63.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0179	0.00500	"	0.0333	ND	53.7	30-120			
Pyrene	0.0338	0.00500	"	0.0333	ND	101	35-142			
1-Methylnaphthalene	0.0532	0.00500	"	0.0333	0.0599	NR	15-130			QM-07
2-Methylnaphthalene	0.0490	0.00500	"	0.0333	0.0539	NR	15-130			QM-07
Surrogate: 2-Methylnaphthalene-d10	0.0223		"	0.0333		66.8	40-150			
Surrogate: Fluoranthene-d10	0.0280		"	0.0333		84.0	40-150			

Matrix Spike Dup (BFD0518-MSD1)			Source: 2204308-01		Prepared: 04/25/22 Analyzed: 04/27/22					
Acenaphthene	0.0206	0.00500	mg/kg	0.0333	ND	61.7	31-137	51.9	30	QM-07
Anthracene	0.0256	0.00500	"	0.0333	ND	76.8	30-120	8.76	30	
Benzo (a) anthracene	0.0229	0.00500	"	0.0333	ND	68.7	30-120	2.49	30	
Benzo (a) pyrene	0.0218	0.00500	"	0.0333	ND	65.5	30-120	2.92	30	
Benzo (b) fluoranthene	0.0219	0.00500	"	0.0333	ND	65.6	30-120	9.38	30	
Benzo (k) fluoranthene	0.0237	0.00500	"	0.0333	ND	71.1	30-120	9.98	30	
Chrysene	0.0281	0.00500	"	0.0333	0.00371	73.3	30-120	13.1	30	
Dibenz (a,h) anthracene	0.0191	0.00500	"	0.0333	ND	57.4	30-120	11.4	30	
Fluoranthene	0.0261	0.00500	"	0.0333	ND	78.2	30-120	23.0	30	
Fluorene	0.0221	0.00500	"	0.0333	ND	66.3	30-120	4.33	30	
Indeno (1,2,3-cd) pyrene	0.0196	0.00500	"	0.0333	ND	58.9	30-120	9.32	30	
Pyrene	0.0267	0.00500	"	0.0333	ND	80.1	35-142	23.4	30	
1-Methylnaphthalene	0.0704	0.00500	"	0.0333	0.0599	31.3	15-130	27.8	50	
2-Methylnaphthalene	0.0329	0.00500	"	0.0333	0.0539	NR	15-130	39.3	50	QM-07
Surrogate: 2-Methylnaphthalene-d10	0.0200		"	0.0333		60.1	40-150			
Surrogate: Fluoranthene-d10	0.0233		"	0.0333		69.8	40-150			

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**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 BFD0513 - EPA 3050B**

**Blank (BFD0513-BLK1)**

Prepared: 04/25/22 Analyzed: 04/30/22

Boron ND 0.0100 mg/L

**LCS (BFD0513-BS1)**

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 4.50 0.0100 mg/L 5.00 90.1 80-120

**Duplicate (BFD0513-DUP1)**

Source: 2204266-01

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 0.253 0.0100 mg/L 0.261 3.05 20

**Matrix Spike (BFD0513-MS1)**

Source: 2204266-01

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 4.50 0.0100 mg/L 5.00 0.261 84.8 75-125

**Matrix Spike Dup (BFD0513-MSD1)**

Source: 2204266-01

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 4.41 0.0100 mg/L 5.00 0.261 83.0 75-125 2.05 25

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

### Total Metals by EPA 6020B - Quality Control

#### Summit Scientific

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

#### Batch BFD0538 - EPA 3050B

##### Blank (BFD0538-BLK1)

Prepared: 04/25/22 Analyzed: 04/30/22

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

##### LCS (BFD0538-BS1)

Prepared: 04/25/22 Analyzed: 04/30/22

Arsenic	45.2	0.200	mg/kg wet	40.0	113	80-120
Barium	39.4	0.400	"	40.0	98.5	80-120
Cadmium	2.28	0.200	"	2.00	114	80-120
Copper	41.0	0.400	"	40.0	103	80-120
Lead	20.9	0.200	"	20.0	105	80-120
Nickel	40.3	0.400	"	40.0	101	80-120
Selenium	4.00	0.260	"	4.00	100	80-120
Silver	2.06	0.0200	"	2.00	103	80-120
Zinc	44.6	0.400	"	40.0	112	80-120

##### Duplicate (BFD0538-DUP1)

Source: 2204029-08

Prepared: 04/25/22 Analyzed: 04/30/22

Arsenic	3.08	0.224	mg/kg dry	3.03	1.84	20
Barium	155	0.448	"	159	2.02	20
Cadmium	0.160	0.224	"	0.168	4.88	20
Copper	4.36	0.448	"	4.49	2.90	20
Lead	7.68	0.224	"	7.89	2.69	20
Nickel	3.58	0.448	"	3.70	3.33	20
Selenium	0.763	0.291	"	0.761	0.200	20
Silver	0.0448	0.0224	"	0.0508	12.5	20
Zinc	16.6	0.448	"	16.7	0.551	20

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**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 BFD0538 - EPA 3050B**

Matrix Spike (BFD0538-MS1)		Source: 2204029-08			Prepared: 04/25/22 Analyzed: 04/30/22					
Arsenic	57.1	0.224	mg/kg dry	44.8	3.03	121	75-125			
Barium	238	0.448	"	44.8	159	176	75-125			QM-05
Cadmium	2.78	0.224	"	2.24	0.168	117	75-125			
Copper	47.0	0.448	"	44.8	4.49	94.9	75-125			
Lead	32.5	0.224	"	22.4	7.89	110	75-125			
Nickel	50.2	0.448	"	44.8	3.70	104	75-125			
Selenium	5.31	0.291	"	4.48	0.761	102	75-125			
Silver	2.38	0.0224	"	2.24	0.0508	104	75-125			
Zinc	70.9	0.448	"	44.8	16.7	121	75-125			

Matrix Spike Dup (BFD0538-MSD1)		Source: 2204029-08			Prepared: 04/25/22 Analyzed: 04/30/22					
Arsenic	61.4	0.224	mg/kg dry	44.8	3.03	130	75-125	7.35	25	QM-05
Barium	228	0.448	"	44.8	159	156	75-125	3.98	25	QM-05
Cadmium	2.72	0.224	"	2.24	0.168	114	75-125	2.24	25	
Copper	49.0	0.448	"	44.8	4.49	99.3	75-125	4.09	25	
Lead	31.5	0.224	"	22.4	7.89	105	75-125	3.34	25	
Nickel	51.5	0.448	"	44.8	3.70	107	75-125	2.65	25	
Selenium	5.32	0.291	"	4.48	0.761	102	75-125	0.112	25	
Silver	2.28	0.0224	"	2.24	0.0508	99.2	75-125	4.35	25	
Zinc	75.8	0.448	"	44.8	16.7	132	75-125	6.72	25	QM-05

Summit Scientific

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
05/06/22 11:39

**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 BFE0094 - 3060A Mod**

**Blank (BFE0094-BLK1)**

Prepared & Analyzed: 05/05/22

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BFE0094-BS1)**

Prepared & Analyzed: 05/05/22

Chromium, Hexavalent 25.4 0.30 mg/kg wet 25.0 102 80-120

**Duplicate (BFE0094-DUP1)**

Source: 2204337-01

Prepared & Analyzed: 05/05/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BFE0094-MS1)**

Source: 2204337-01

Prepared & Analyzed: 05/05/22

Chromium, Hexavalent 29.8 0.30 mg/kg dry 28.1 ND 106 75-125

**Matrix Spike Dup (BFE0094-MSD1)**

Source: 2204337-01

Prepared & Analyzed: 05/05/22

Chromium, Hexavalent 29.3 0.30 mg/kg dry 28.1 ND 104 75-125 1.71 20

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**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 BFD0563 - General Preparation**

**Blank (BFD0563-BLK1)**

Prepared: 04/26/22 Analyzed: 05/03/22

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

**LCS (BFD0563-BS1)**

Prepared: 04/26/22 Analyzed: 05/03/22

Calcium	4.77	0.0500	mg/L wet	5.00	95.4	70-130
Magnesium	5.78	0.0500	"	5.00	116	70-130
Sodium	5.78	0.0500	"	5.00	116	70-130

Summit Scientific

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



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**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 BFD0539 - General Preparation**

**Duplicate (BFD0539-DUP1)**

**Source: 2204274-02**

**Prepared & Analyzed: 04/25/22**

% Solids	88.9	%		89.5		0.682	20
----------	------	---	--	------	--	-------	----

Summit Scientific

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



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

**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 BFD0575 - General Preparation**

**Blank (BFD0575-BLK1)**

Prepared: 04/26/22 Analyzed: 04/27/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BFD0575-BS1)**

Prepared: 04/26/22 Analyzed: 04/27/22

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

**Duplicate (BFD0575-DUP1)**

**Source: 2204266-01**

Prepared: 04/26/22 Analyzed: 04/27/22

Specific Conductance (EC) 2.82 0.0100 mmhos/cm 2.91 3.24 20

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

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

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

**Batch BFD0576 - General Preparation**

**LCS (BFD0576-BS1)**

Prepared: 04/26/22 Analyzed: 04/27/22

pH	9.12	pH Units	9.18	99.3	95-105
----	------	----------	------	------	--------

**Duplicate (BFD0576-DUP1)**

Source: 2204080-09

Prepared: 04/26/22 Analyzed: 04/27/22

pH	8.00	pH Units	8.00	0.00	20
----	------	----------	------	------	----

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/06/22 11:39

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 19, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Wells Ranch AE20

Work Order #2306625

Enclosed are the results of analyses for samples received by Summit Scientific on 06/29/23 19:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury  
President



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
07/19/23 09:11

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
H2O Side	2306625-02	Water	06/26/23 00:00	06/29/23 19:30

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.*

Client: Fremont		Send Data To:		Send Invoice To:	
Address:		Project Manager: Paul Henehan		Company: Chevron	
City/State/Zip:		E-Mail: ethan b, paul h		Project Name/Location:	
Phone:		Project Name: Noble - Wells Ranch AE20		AFE#:	
Sampler Name:		Project Number:		PO/Billing Codes:	
				Contact: Dan Peterson	

				Preservative				Matrix				Analysis Requested				Special Instructions			
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other Oil	Water	Soil	Air-Canister #	Other	Arsenic						
1	Oil Side	6/26/23		2			X	X					X						
2	H2O Side	↓		↓			X		X				X						
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <i>G. H. Mac</i>	Date/Time: 6/28/23 1930	Received by: <i>[Signature]</i> S2	Date/Time: 6/28/23 1930	TAT Business Days	Field DO	Notes:
Relinquished by: 52	Date/Time: 6/28/23 1930	Received by: <i>[Signature]</i>	Date/Time: 6/28/23 1930	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 8.3	Corrected Temperature: <i>8</i>	IR gun #: 1	HNO3 lot #:	Standard	Field Turb.	

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2306625Client: Fremont Client Project ID: Noble - Wells Branch AE2GShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: \_\_\_\_\_

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

Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☒ Other ☐Temp (°C) 8.3Thermometer # 1

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

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

Custodian Printed Name

6/28/23

Date/Time

19:30



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
07/19/23 09:11

**H2O Side**  
**2306625-02 (Water)**

**Summit Scientific**

**Total Metals by EPA Method 200.8**

Date Sampled: **06/26/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	<b>0.9050</b>	0.6000	ug/l	1	BGG0449	07/14/23	07/17/23	EPA 200.8	

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 - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
07/19/23 09:11

### Total Metals by EPA Method 200.8 - Quality Control

#### Summit Scientific

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

#### Batch BGG0449 - EPA 200.8

##### Blank (BGG0449-BLK1)

Prepared: 07/14/23 Analyzed: 07/17/23

Arsenic ND 0.6000 ug/l

##### Duplicate (BGG0449-DUP1)

Source: 2307195-01

Prepared: 07/14/23 Analyzed: 07/17/23

Arsenic ND 0.6000 ug/l ND 20

##### Matrix Spike (BGG0449-MS1)

Source: 2307195-01

Prepared: 07/14/23 Analyzed: 07/17/23

Arsenic 492.8 0.6000 ug/l 500 ND 98.6 70-130

##### Matrix Spike Dup (BGG0449-MSD1)

Source: 2307195-01

Prepared: 07/14/23 Analyzed: 07/17/23

Arsenic 498.0 0.6000 ug/l 500 ND 99.6 70-130 1.04 25

Summit Scientific

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



## Summit Scientific

Sample Delivery Group: L1631809

Samples Received: 07/01/2023

Project Number:

Description: 2306625

Report To: REPORTS

4653 Table Mountain Drive

Golden, CO 80403

Entire Report Reviewed By:



T. Alan Harvill

Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

**Pace Analytical National**12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 [www.pacenational.com](http://www.pacenational.com)

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		<sup>8</sup> Al
		<sup>9</sup> Sc

## SAMPLE SUMMARY

OIL SIDE L1631809-01 Solid

Collected by

Collected date/time

Received date/time

06/26/23 00:00

07/01/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2092820	1	07/11/23 14:47	07/12/23 10:21	ZSA	Mt. Juliet, TN

<sup>1</sup>Cp $^{99m}\text{Tc}$ 

3 Ss

 ${}^4\text{Cn}$  $^{87}\text{Sr}$  ${}^6\text{Qc}$ <sup>7</sup>GI ${}^8\text{Al}$ <sup>9</sup>Sc

# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



T. Alan Harvill  
Project Manager

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	U		0.518	2.00	1	07/12/2023 10:21	<a href="#">WG2092820</a>

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Method Blank (MB)

(MB) R3947754-1 07/12/23 09:40

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.518	2.00

Laboratory Control Sample (LCS)

(LCS) R3947754-2 07/12/23 09:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	92.0	92.0	80.0-120	

L1633806-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1633806-06 07/12/23 09:45 • (MS) R3947754-5 07/12/23 09:53 • (MSD) R3947754-6 07/12/23 09:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	U	71.3	80.1	71.3	80.1	1	75.0-125	J6		11.5	20

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

### Qualifier Description

J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
----	---

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

# ACCREDITATIONS & LOCATIONS

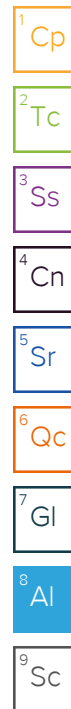
## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1 6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1 4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		


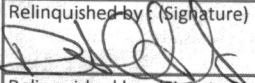

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





Company Name/Address: <b>Summit Scientific</b> <b>4653 Table Mountain Drive</b> <b>Golden, CO 80403</b>				Billing Information: <b>Attn: Ben Shrewsbury</b> <b>Summit Scientific</b> <b>4653 Table Mountain Drive</b> <b>Golden, CO 80403</b>				Pres Chk	Analysis / Container / Preservative										Chain of Custody    Page <u>1</u> of <u>1</u>   PEOPLE ADVANCING SCIENCE  12065 Lebanon Rd    Mount Juliet, TN 37122 Phone: 615-758-5858    Alt: 800-767-5859 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <a href="https://info.pacelabs.com/hubs/pas-standard-terms.pdf">https://info.pacelabs.com/hubs/pas-standard-terms.pdf</a>						
Report to: <b>reports</b>				Email To: <b>reports@s2scientific.com</b>				<input checked="" type="checkbox"/>	<div style="writing-mode: vertical-rl; transform: rotate(180deg);">Arsenic</div>										SDG # <u>L1631809</u>						
Project Description: <b>2306625</b>				City/State Collected:		Please Circle: PT MT CT ET		Table # <u>1700d</u>																	
Phone: <b>303-277-9310</b>		Client Project #		Lab Project #		Acctnum:																			
Collected by (print):		Site/Facility ID #		P.O. #		Template:																			
Collected by (signature):		<b>Rush?</b> (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day		Quote #		Prelogin:																			
Immediately Packed on Ice N <input type="checkbox"/> Y <input type="checkbox"/>				Date Results Needed		No. of Cntrs		PM:																	
Sample ID		Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	PB:																	
Oil Side		Grab	OT	6/26/23	2	X	Shipped Via:																		
Remarks		Sample # (lab only)	- 01	6/26/23	2	X	Remarks																		
* Matrix: SS - Soil    AIR - Air    F - Filter GW - Groundwater    B - Bioassay WW - WasteWater DW - Drinking Water OT - Other <u>Oil</u>		Remarks:				pH _____ Temp _____ Flow _____ Other _____				<b>Sample Receipt Checklist</b> COC Seal Present/Intact: <input checked="" type="checkbox"/> NP <input type="checkbox"/> Y <input type="checkbox"/> N COC Signed/Accurate: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If Applicable VOA Zero Headspace: <input type="checkbox"/> Y <input type="checkbox"/> N Preservation Correct/Checked: <input type="checkbox"/> Y <input type="checkbox"/> N RAD Screen <0.5 mR/hr: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N															
Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier		Tracking # <u>6481 5466 4067</u>				Relinquished by: (Signature) 				Date: <u>6/30/23</u>				Time: <u>1130</u>				Received by: (Signature) <u>Same Contine</u>				Trip Blank Received: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> HCL / MeOH TBR			
Relinquished by: (Signature) <u>Dele Contine</u>		Date: <u>8/30/23</u>				Time: <u>1800</u>				Received by: (Signature) <u>FEDEX</u>				Temp: <u>GBAC</u> Bottles Received: <u>2</u>				If preservation required by Login: Date/Time							
Relinquished by: (Signature)		Date:				Time:				Received for lab by: (Signature) 				Date: <u>7/1/23</u> Time: <u>1020</u>				Hold:				Condition: NCF / <input checked="" type="checkbox"/> OK			



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AE20

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
07/19/23 09:11

### Notes and Definitions

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