

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-266

Sample ID	Sample Date	Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4- Trimethyl- Benzene (mg/kg)	1,3,5- Trimethyl- Benzene (mg/kg)	Naphthalene (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500**		
AST01@6.0"	10/24/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
AST02@6.0"	10/24/2023	0.5 Ft	0.016	<0.0050	0.030	0.29	0.068	0.049	0.0052	2.6	<50	<50
AST03@6.0"	10/24/2023	0.5 Ft	0.0035	<0.0050	<0.0050	0.28	0.049	0.027	<0.0038	3.1	<50	<50
AST04@6.0"	10/24/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
AST05@6.0"	10/24/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
SEP01@6.0"	10/23/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
SEP02@6.0"	10/23/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
SEP03@4.0'	10/23/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
SEP04@4.0'	10/23/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
SEP05@4.0'	10/23/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVB01@7.0'	10/23/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	0.0076	0.072	0.0042	51	210	<50
PWVB02@7.0'	10/23/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVB03@7.0'	10/23/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVB04@7.0'	10/23/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVB05@7.0'	10/23/2023	7.0 Ft	0.0040	<0.0050	0.0059	0.038	0.051	0.030	<0.0038	<0.50	<50	<50
PWVN01@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVS01@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVE01@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVE02@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVE03@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	0.60	<50	<50
PWVE04@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVE05@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVW01@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVW02@6.0'	10/23/2023	6.0 Ft	0.0062	<0.0050	0.40	1.1	0.40	0.88	0.18	220	60	<50
PWVW03@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	0.0057	0.022	<0.0050	0.22	<0.0038	9.8	<50	<50
PWVW04@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWVW05@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50

Bold faced values exceed the COGCC Table 915-1 concentrations

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

* Indicates laboratory minimum detection limit in excess of SSL

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

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-266

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3- cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
AST01@6.0"	10/24/2023	0.5 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST02@6.0"	10/24/2023	0.5 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0119	0.0326
AST03@6.0"	10/24/2023	0.5 Ft	<0.00500	<0.00500	<0.00500	0.0128	0.0215	0.00772	0.00599	<0.00500	<0.00500	<0.00500	0.00974	<0.00500	<0.00500	<0.00500
AST04@6.0"	10/24/2023	0.5 Ft	<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
AST05@6.0"	10/24/2023	0.5 Ft	<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
SEP01@6.0"	10/23/2023	0.5 Ft	<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
SEP02@6.0"	10/23/2023	0.5 Ft	<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
SEP03@4.0'	10/23/2023	4.0 Ft	<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
SEP04@4.0'	10/23/2023	4.0 Ft	<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
SEP05@4.0'	10/23/2023	4.0 Ft	<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
PWVB01@7.0'	10/23/2023	7.0 Ft	<0.00500	0.00649	0.0208	<0.00500	<0.00500	<0.00500	0.0126	<0.00500	0.0102	<0.00500	<0.00500	0.0107	0.205	0.258
PWVB02@7.0'	10/23/2023	7.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00518	0.0126
PWVB03@7.0'	10/23/2023	7.0 Ft	<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
PWVB04@7.0'	10/23/2023	7.0 Ft	<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
PWVB05@7.0'	10/23/2023	7.0 Ft	<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
PWVN01@6.0'	10/23/2023	6.0 Ft	<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
PWVS01@6.0'	10/23/2023	6.0 Ft	<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
PWVE01@6.0'	10/23/2023	6.0 Ft	<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
PWVE02@6.0'	10/23/2023	6.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0112	0.0261
PWVE03@6.0'	10/23/2023	6.0 Ft	<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
PWVE04@6.0'	10/23/2023	6.0 Ft	<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
PWVE05@6.0'	10/23/2023	6.0 Ft	<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
PWVW01@6.0'	10/23/2023	6.0 Ft	<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
PWVW02@6.0'	10/23/2023	6.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.153	0.341
PWVW03@6.0'	10/23/2023	6.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0101	0.0224
PWVW04@6.0'	10/23/2023	6.0 Ft	<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
PWVW05@6.0'	10/23/2023	6.0 Ft	<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)

* Indicates laboratory minimum detection limit in excess of SSL

TABLE 3
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY INC.
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-266

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
AST01@6.0"	10/24/2023	0.5 Ft	8.61	0.115	0.372	<2.00
AST02@6.0"	10/24/2023	0.5 Ft	8.84	0.272	1.29	<2.00
AST03@6.0"	10/24/2023	0.5 Ft	8.20	0.290	1.29	<2.00
AST04@6.0"	10/24/2023	0.5 Ft	7.95	0.282	1.14	<2.00
AST05@6.0"	10/24/2023	0.5 Ft	7.81	0.429	1.78	<2.00
SEP01@6.0"	10/23/2023	0.5 Ft	8.58	0.109	0.145	<2.00
SEP02@6.0"	10/23/2023	0.5 Ft	8.56	0.0992	0.136	<2.00
SEP03@4.0'	10/23/2023	4.0 Ft	8.60	0.194	0.674	<2.00
SEP04@4.0'	10/23/2023	4.0 Ft	8.02	0.153	0.278	<2.00
SEP05@4.0'	10/23/2023	4.0 Ft	8.34	0.173	0.476	<2.00
PWVB01@7.0'	10/23/2023	7.0 Ft	9.39	0.192	0.484	<2.00
PWVB02@7.0'	10/23/2023	7.0 Ft	8.46	0.206	0.809	<2.00
PWVB03@7.0'	10/23/2023	7.0 Ft	8.09	0.137	0.0856	<2.00
PWVB04@7.0'	10/23/2023	7.0 Ft	10.4	0.200	0.829	<2.00
PWVB05@7.0'	10/23/2023	7.0 Ft	10.9	0.312	0.829	<2.00
PWVN01@6.0'	10/23/2023	6.0 Ft	8.51	0.151	0.402	<2.00
PWVS01@6.0'	10/23/2023	6.0 Ft	8.32	0.123	0.0646	<2.00
PWVE01@6.0'	10/23/2023	6.0 Ft	8.34	0.232	0.900	<2.00
PWVE02@6.0'	10/23/2023	6.0 Ft	7.51	0.204	0.0780	<2.00
PWVE03@6.0'	10/23/2023	6.0 Ft	7.78	0.0925	0.202	<2.00
PWVE04@6.0'	10/23/2023	6.0 Ft	8.16	0.356	0.290	<2.00

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
PWVE05@6.0'	10/23/2023	6.0 Ft	8.12	0.175	0.339	<2.00
PWVW01@6.0'	10/23/2023	6.0 Ft	8.56	0.187	0.598	<2.00
PWVW02@6.0'	10/23/2023	6.0 Ft	8.56	0.160	0.563	<2.00
PWVW03@6.0'	10/23/2023	6.0 Ft	8.29	0.235	1.13	<2.00
PWVW04@6.0'	10/23/2023	6.0 Ft	8.69	0.191	0.861	<2.00
PWVW05@6.0'	10/23/2023	6.0 Ft	8.37	0.142	2.02	<2.00
BKG01@6.0"	10/24/2023	0.5 Ft	7.81	0.196	0.821	<2.00
BKG01@4.0'	10/24/2023	4.0 Ft	7.89	1.58	5.42	<2.00
BKG01@6.5'	10/24/2023	6.5 Ft	7.85	0.853	3.77	<2.00
BKG02@6.0"	10/24/2023	0.5 Ft	8.26	0.493	4.38	<2.00
BKG02@4.0'	10/24/2023	4.0 Ft	7.87	3.13	9.83	<2.00
BKG02@6.5'	10/24/2023	6.5 Ft	7.75	1.54	5.78	<2.00
BKG03@6.0"	10/24/2023	0.5 Ft	8.25	0.749	6.20	<2.00
BKG03@4.0'	10/24/2023	4.0 Ft	8.05	0.987	6.04	<2.00
BKG03@6.5'	10/24/2023	6.5 Ft	8.20	0.362	2.94	<2.00
BKG04@6.0"	10/24/2023	0.5 Ft	8.44	0.424	3.59	<2.00
BKG04@4.0'	10/24/2023	4.0 Ft	8.38	1.68	9.20	<2.00
BKG04@6.5'	10/24/2023	6.5 Ft	8.30	0.519	3.78	<2.00
BKG05@6.0"	10/24/2023	0.5 Ft	8.37	0.365	2.83	<2.00
BKG05@4.0'	10/24/2023	4.0 Ft	8.17	2.07	8.54	<2.00
BKG05@6.5'	10/24/2023	6.5 Ft	7.90	1.57	7.18	<2.00

Bold faced values exceed the COGCC Table 915-1 concentrations

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

Local Background Samples (BKG01, BKG02, BKG03, BKG04, BKG05)

TABLE 4
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-266

Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
AST01@6.0"	10/24/2023	0.5 Ft	0.901	33.9	<0.200	<0.30	2.05	2.21	1.46	<0.260	<0.0020	4.70
AST02@6.0"	10/24/2023	0.5 Ft	1.11	73.7	<0.200	<0.30	3.26	7.27	2.61	<0.260	0.0276	11.0
AST03@6.0"	10/24/2023	0.5 Ft	0.923	100	<0.200	<0.30	3.73	8.01	2.70	<0.260	0.0343	12.9
AST04@6.0"	10/24/2023	0.5 Ft	0.940	92.4	0.216	<0.30	4.14	7.24	2.66	<0.260	0.0323	12.9
AST05@6.0"	10/24/2023	0.5 Ft	0.959	86.0	0.218	<0.30	5.52	6.78	2.53	<0.260	0.0319	16.3
SEP01@6.0"	10/23/2023	0.5 Ft	0.904	81.1	<0.200	<0.30	3.05	6.23	2.30	<0.260	0.0257	10.6
SEP02@6.0"	10/23/2023	0.5 Ft	1.08	65.8	<0.200	<0.30	2.93	4.66	2.25	<0.260	0.0210	8.95
SEP03@4.0'	10/23/2023	4.0 Ft	0.971	79.7	<0.200	<0.30	3.01	5.74	2.48	<0.260	0.0224	18.7
SEP04@4.0'	10/23/2023	4.0 Ft	0.872	87.0	<0.200	<0.30	1.97	3.46	1.88	<0.260	<0.0200	7.39
SEP05@4.0'	10/23/2023	4.0 Ft	0.849	85.6	<0.200	<0.30	2.81	5.44	2.33	<0.260	0.0264	9.57
PWVB01@7.0'	10/23/2023	7.0 Ft	0.788	50.4	<0.200	<0.30	3.40	3.50	1.88	<0.260	<0.0200	8.72
PWVB02@7.0'	10/23/2023	7.0 Ft	0.910	50.6	<0.200	<0.30	2.52	3.59	1.92	<0.260	<0.0200	10.2
PWVB03@7.0'	10/23/2023	7.0 Ft	0.860	99.9	<0.200	<0.30	3.38	6.64	2.62	<0.260	0.0297	9.95
PWVB04@7.0'	10/23/2023	7.0 Ft	0.345	37.9	<0.200	<0.30	2.98	6.03	1.90	<0.260	0.0256	10.5
PWVB05@7.0'	10/23/2023	7.0 Ft	0.659	121	<0.200	<0.30	3.36	7.48	2.80	<0.260	0.0319	11.5
PWVN01@6.0'	10/23/2023	6.0 Ft	0.893	83.9	<0.200	<0.30	3.49	6.46	2.57	<0.260	0.0258	11.3
PWVS01@6.0'	10/23/2023	6.0 Ft	0.845	96.5	<0.200	<0.30	2.93	5.96	2.33	<0.260	0.0240	10.1
PWVE01@6.0'	10/23/2023	6.0 Ft	0.744	76.8	<0.200	<0.30	2.74	5.19	2.70	<0.260	0.0231	9.03
PWVE02@6.0'	10/23/2023	6.0 Ft	1.03	96.3	0.205	<0.30	3.60	11.8	2.91	<0.260	0.0387	13.2
PWVE03@6.0'	10/23/2023	6.0 Ft	0.766	79.9	<0.200	<0.30	2.63	6.35	2.59	<0.260	<0.0200	10.6
PWVE04@6.0'	10/23/2023	6.0 Ft	2.44	106	<0.200	<0.30	6.41	7.58	5.03	<0.260	0.0324	20.7
PWVE05@6.0'	10/23/2023	6.0 Ft	1.71	57.3	<0.200	<0.30	3.78	4.91	3.69	<0.260	<0.0200	14.9
PWVW01@6.0'	10/23/2023	6.0 Ft	2.53	58.8	<0.200	<0.30	5.64	4.52	3.69	<0.260	<0.0200	15.0
PWVW02@6.0'	10/23/2023	6.0 Ft	1.43	58.1	<0.200	<0.30	4.17	4.32	3.33	<0.260	<0.0200	14.1
PWVW03@6.0'	10/23/2023	6.0 Ft	3.23	128	0.202	<0.30	7.17	8.70	5.66	<0.260	0.0369	21.6
PWVW04@6.0'	10/23/2023	6.0 Ft	2.10	63.8	<0.200	<0.30	5.60	5.23	3.82	<0.260	<0.0200	16.8
PWVW05@6.0'	10/23/2023	6.0 Ft	4.26	85.3	0.215	<0.30	6.85	8.18	5.19	<0.260	0.0298	23.3
BKG01@6.0"	10/24/2023	0.5 Ft	1.06	117	0.307	<0.30	3.58	9.61	2.76	<0.260	0.0554	13.6
BKG01@4.0'	10/24/2023	4.0 Ft	0.946	116	<0.200	<0.30	2.61	5.43	2.47	<0.260	0.0235	8.81

Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
BKG01@6.5'	10/24/2023	6.5 Ft	0.843	81.2	<0.200	<0.30	2.25	5.17	2.38	<0.260	0.0223	8.56
BKG02@6.0"	10/24/2023	0.5 Ft	1.03	127	0.262	<0.30	3.17	9.29	2.60	<0.260	0.0472	11.5
BKG02@4.0'	10/24/2023	4.0 Ft	0.766	136	<0.200	<0.30	1.86	3.85	1.70	<0.260	<0.0200	7.12
BKG02@6.5'	10/24/2023	6.5 Ft	0.653	21.5	<0.200	<0.30	1.39	2.60	1.14	<0.260	<0.0200	5.20
BKG03@6.0"	10/24/2023	0.5 Ft	1.00	114	0.287	<0.30	3.12	9.14	2.44	<0.260	0.0387	12.5
BKG03@4.0'	10/24/2023	4.0 Ft	0.840	76.4	<0.200	<0.30	2.79	6.81	2.44	<0.260	0.0231	10.0
BKG03@6.5'	10/24/2023	6.5 Ft	0.802	160	<0.200	<0.30	2.63	6.07	2.59	<0.260	0.0248	9.42
BKG04@6.0"	10/24/2023	0.5 Ft	1.05	119	0.292	<0.30	4.37	9.78	2.80	<0.260	0.0500	13.6
BKG04@4.0'	10/24/2023	4.0 Ft	0.979	116	<0.200	<0.30	2.23	5.81	2.46	<0.260	0.0283	8.61
BKG04@6.5'	10/24/2023	6.5 Ft	1.50	165	0.235	<0.30	4.68	10.1	4.05	<0.260	0.0488	13.7
BKG05@6.0"	10/24/2023	0.5 Ft	1.02	128	0.329	<0.30	3.72	9.55	2.91	0.268	0.0471	14.1
BKG05@4.0'	10/24/2023	4.0 Ft	0.750	70.5	<0.200	<0.30	2.66	6.49	2.44	<0.260	0.0305	8.98
BKG05@6.5'	10/24/2023	6.5 Ft	1.23	134	<0.200	<0.30	2.91	7.68	2.78	<0.260	0.0343	10.4

Bold faced values exceed the COGCC Table 915-1 concentrations

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

* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed

Local Background Samples (BKG01, BKG02, BKG03, BKG04, BKG05)

TABLE 1
SUMMARY OF GROUNDWATER ORGANIC CHEMISTRY DATA
NOBLE ENERGY INC.
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-266

Sample ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4- Trimethyl- Benzene (µg/L)	1,3,5- Trimethyl- Benzene (µg/L)	TOC Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	LNAPL Thickness (ft)
ECMC Table 915-1 Limits		5.0	560	700	1400	140	67	67				
GW01	10/23/23	1.5	1.3	6.4	82	<1.0	50	27	N/A	7.5 Ft	N/A	NP
GW02	10/23/23	230	32	51	340	8.0	110	47	N/A	7.5 Ft	N/A	NP
GW03	10/23/23	88	30	68	730	17	250	150	N/A	7.5 Ft	N/A	NP
GW04	10/23/23	110	5.4	33	240	8.3	89	37	N/A	7.5 Ft	N/A	NP
GW05	10/23/23	68	3.7	29	170	5.8	94	29	N/A	7.5 Ft	N/A	NP

Bold face values exceed the COGCC limits

Red highlighted 915-1 Limits indicate the referenced groundwater screening level

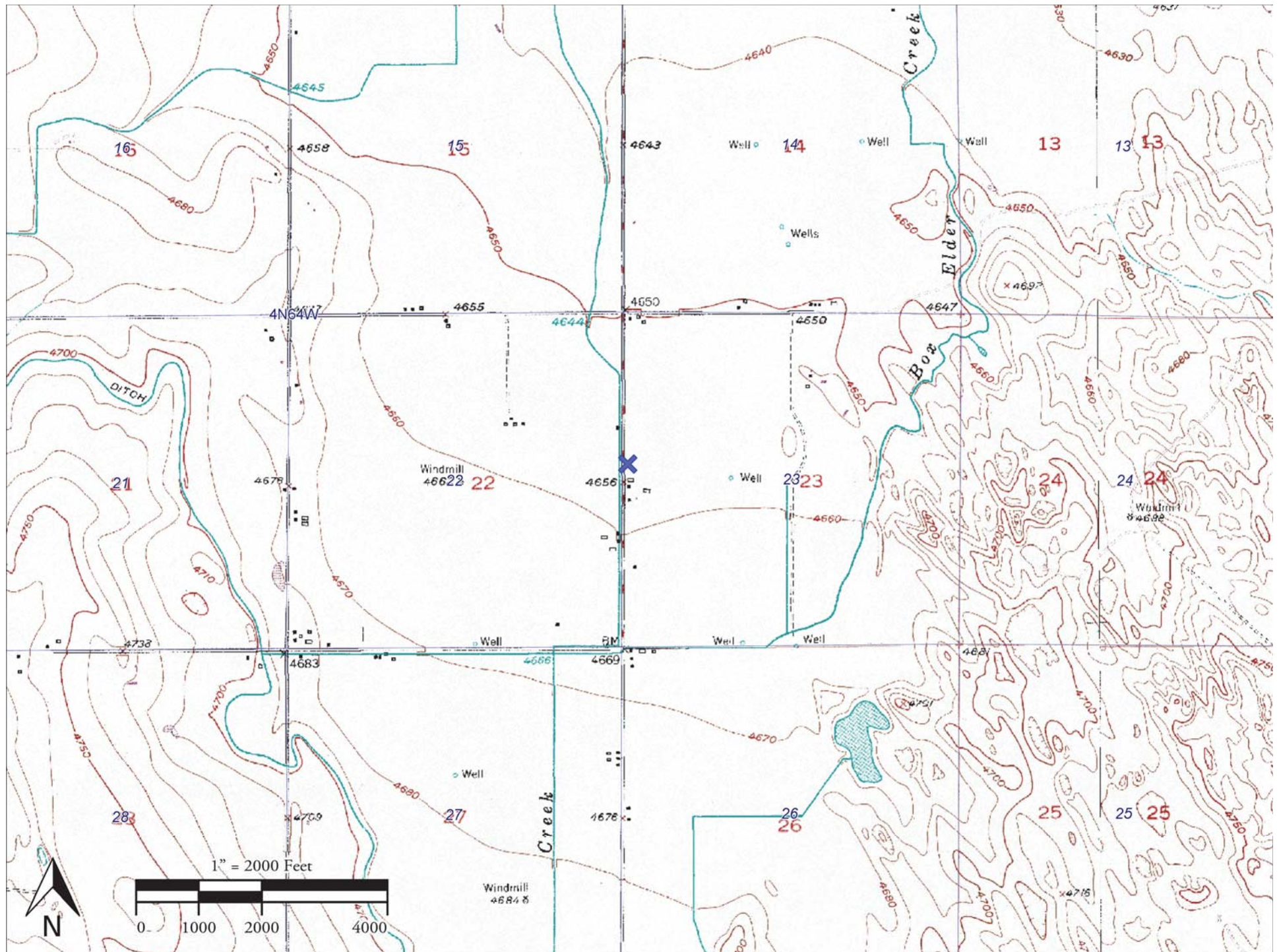
NP - No measureable

LNAPL

NA - Not Analyzed

N/A - Not Applicable

Volkens Coleman T4N-R64W-S23 L01 (Facility) Topo Map



Volgens Coleman T4N-R64W-S23 L01

Remediation #: 30386

Facility ID: 414380

Lat/Long: 40.298549, -104.527065

NWNW Sec. 23, T4N, R64W

Fremont Proj. C023-266

Proposed Site Investigation
Extent: Advance a
minimum of 5 soil borings,
completed as MWs to
define the vertical and
lateral extent of impacts.

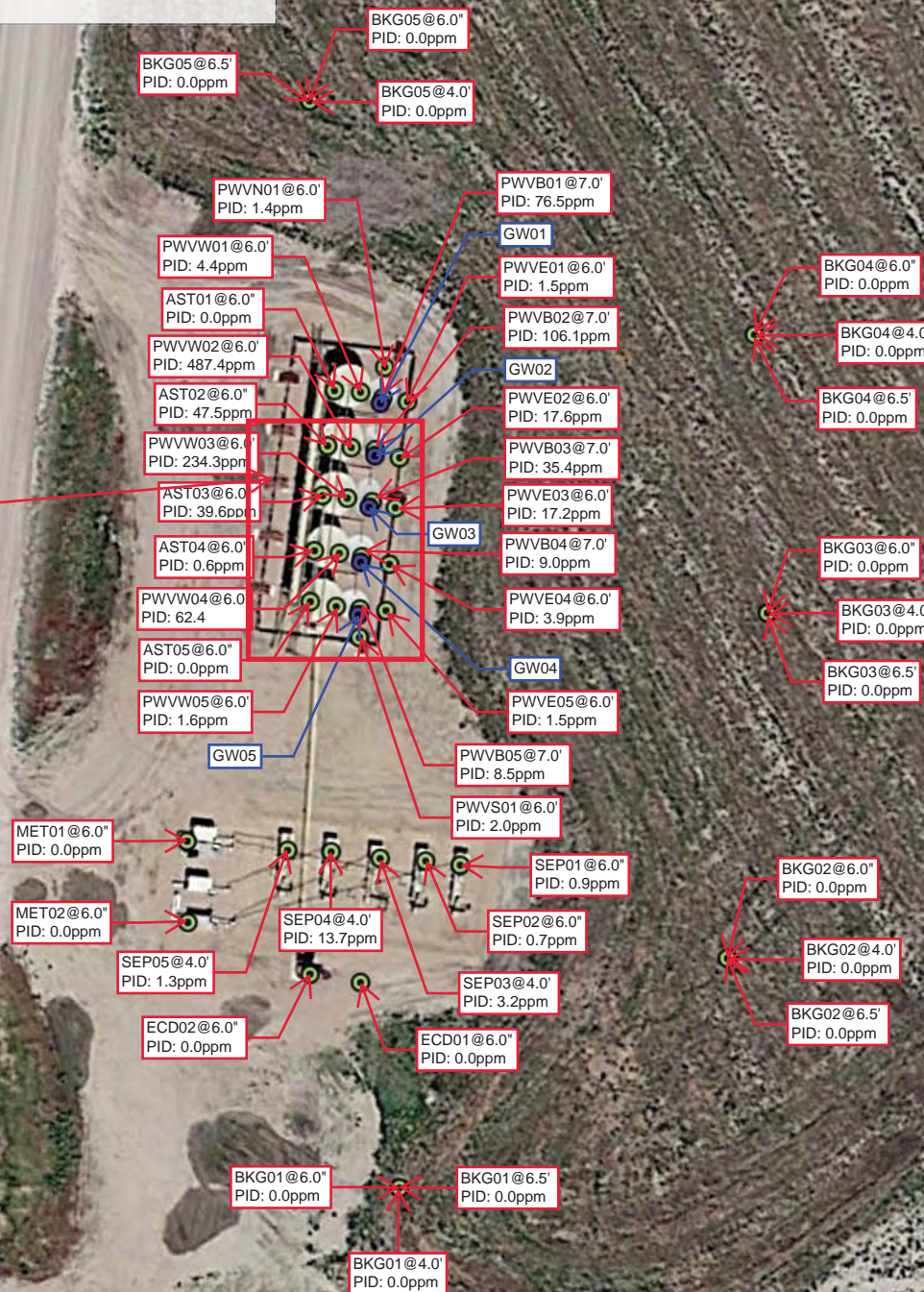


Photo Log



Oct 24, 2023 10:32:17 AM

Description:

#1A - Volkens Coleman T4N-R64W-S23 L01 - 1st Above Ground Storage Tank (Oil) - AST01@6.0" - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#2A - Volkens Coleman T4N-R64W-S23 L01 - 2nd Above Ground Storage Tank (Oil) - AST02@6.0" - Staining/Odor Present - PID: 47.5ppm

Photo Log



Oct 24, 2023 10:32:30 AM

Description:

#3A - Volkens Coleman T4N-R64W-S23 L01 - 3rd Above Ground Storage Tank (Oil) - AST03@6.0" - Staining/Odor Present - PID: 39.6ppm

Photo Log



Description:

#4A - Volkens Coleman T4N-R64W-S23 L01 - 4th Above Ground Storage Tank (Oil) - AST04@6.0" - Slight Staining - No Odor - PID: 0.6ppm

Photo Log



Description:

#5A - Volkens Coleman T4N-R64W-S23 L01 - 5th Above Ground Storage Tank (Oil) - AST05@6.0" - No Impacts Noted - PID: 0.0ppm

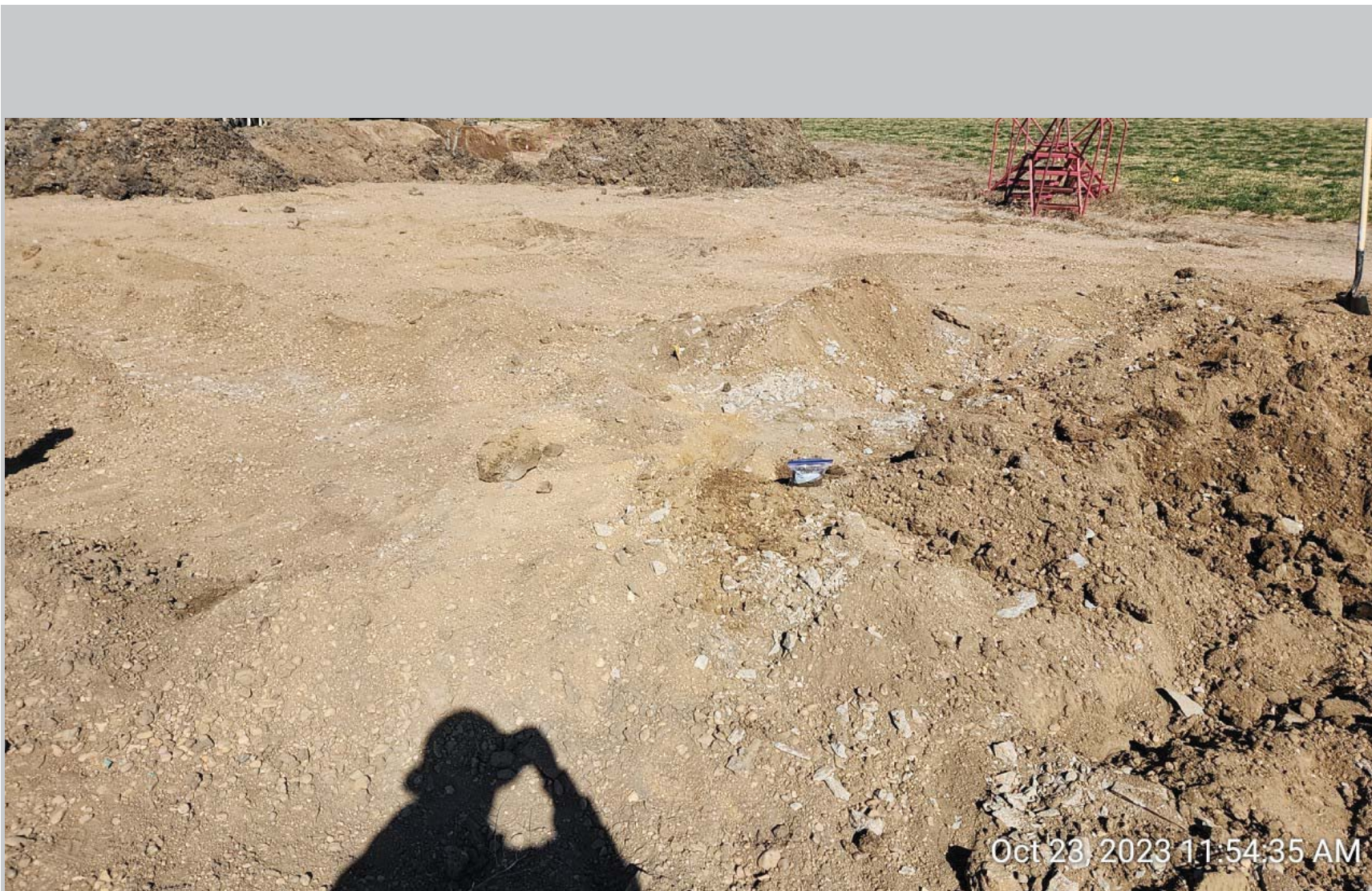
Photo Log



Description:

#6A - Volkens Coleman T4N-R64W-S23 L01 - 1st Separator - SEP01@6.0" - No Impacts Noted - PID: 0.9ppm

Photo Log



Description:

#7A - Volkens Coleman T4N-R64W-S23 L01 - 2nd Separator - SEP02@6.0" - No Impacts Noted - PID: 0.7ppm

Photo Log

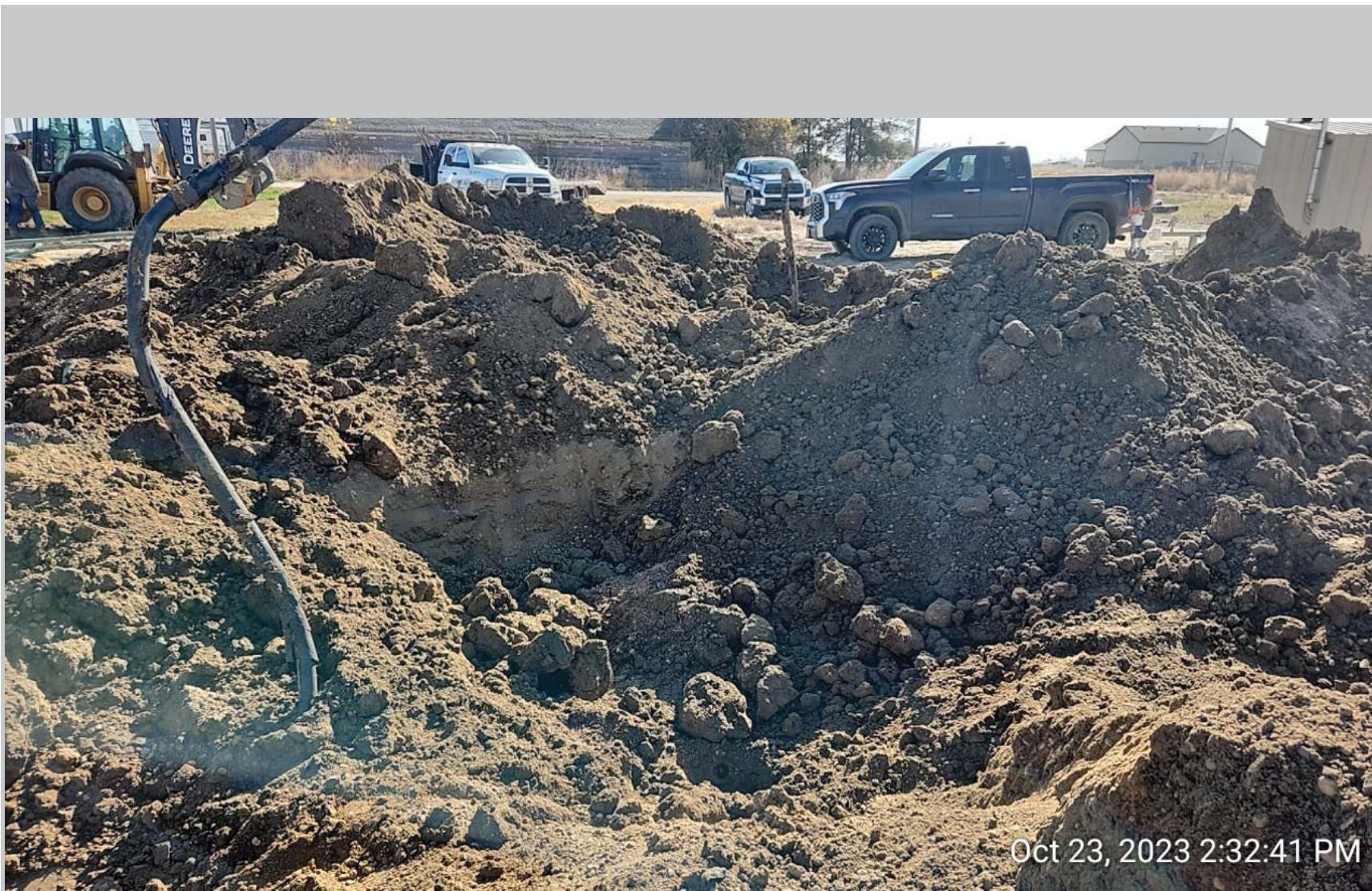


Oct 23, 2023 2:32:30 PM

Description:

#8A - Volkens Coleman T4N-R64W-S23 L01 - 3rd Separator - SEP03@4.0' - No Impacts Noted - PID: 3.2ppm

Photo Log



Description:

#9A - Volkens Coleman T4N-R64W-S23 L01 - 4th Separator - SEP04@4.0' - No Impacts Noted - PID: 13.7ppm

Photo Log



Description:

#10A - Volkens Coleman T4N-R64W-S23 L01 - 5th Separator - SEP05@4.0' - No Impacts Noted - PID: 1.3ppm



Description:

#11A - Volkens Coleman T4N-R64W-S23 L01 - Floor of 1st PWV Excavation - PWVB01@7.0' - Staining/Odor Present - PID: 76.5ppm

Photo Log



Description:

#11B - Volkens Coleman T4N-R64W-S23 L01 - Floor of 1st PWV Excavation - Groundwater at 7.5ft - GW01 - Odor Present - Sheen Present

Photo Log



Description:

#11C - Volkens Coleman T4N-R64W-S23 L01 - North Sidewall of 1st PWV Excavation - PWVN01@6.0' - No Impacts Noted - PID: 1.4ppm

Photo Log



Description:

#11D - Volkens Coleman T4N-R64W-S23 L01 - East Sidewall of 1st PWV Excavation - PWVE01@6.0' - No Impacts Noted - PID: 1.5ppm

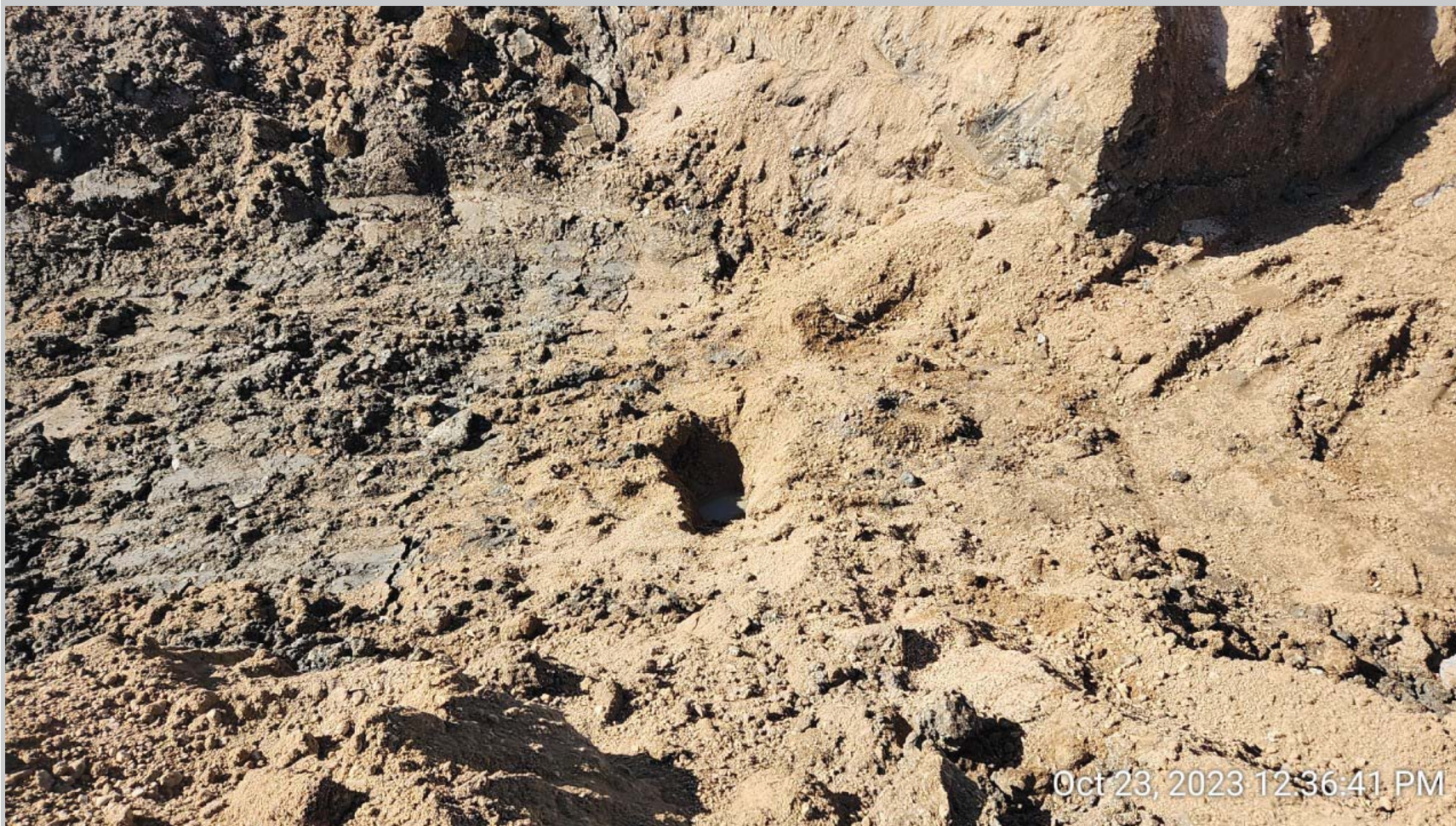
Photo Log



Description:

#11E - Volkens Coleman T4N-R64W-S23 L01 - West Sidewall of 1st PWV Excavation - PWVW01@6.0' - No Impacts Noted - PID: 4.4ppm

Photo Log



Description:

#12A - Volkens Coleman T4N-R64W-S23 L01 - Floor of 2nd PWV Excavation - PWVB02@7.0' - Staining/Odor Present - PID: 106.1ppm

Photo Log



Description:

#12B - Volkens Coleman T4N-R64W-S23 L01 - Floor of 2nd PWV Excavation - Groundwater at 7.5ft - GW02 - Slight Odor - No Sheen Present

Photo Log



Description:

#12C - Volkens Coleman T4N-R64W-S23 L01 - East Sidewall of 2nd PWV Excavation - PWVE02@6.0' - Staining/Odor Present - PID: 17.6ppm

Photo Log



Oct 23, 2023 1:34:34 PM

Description:

#12D - Volkens Coleman T4N-R64W-S23 L01 - West Sidewall of 2nd PWV Excavation - PWVW01@6.0' - Staining/Odor Present - PID: 487.4ppm

Photo Log



Description:

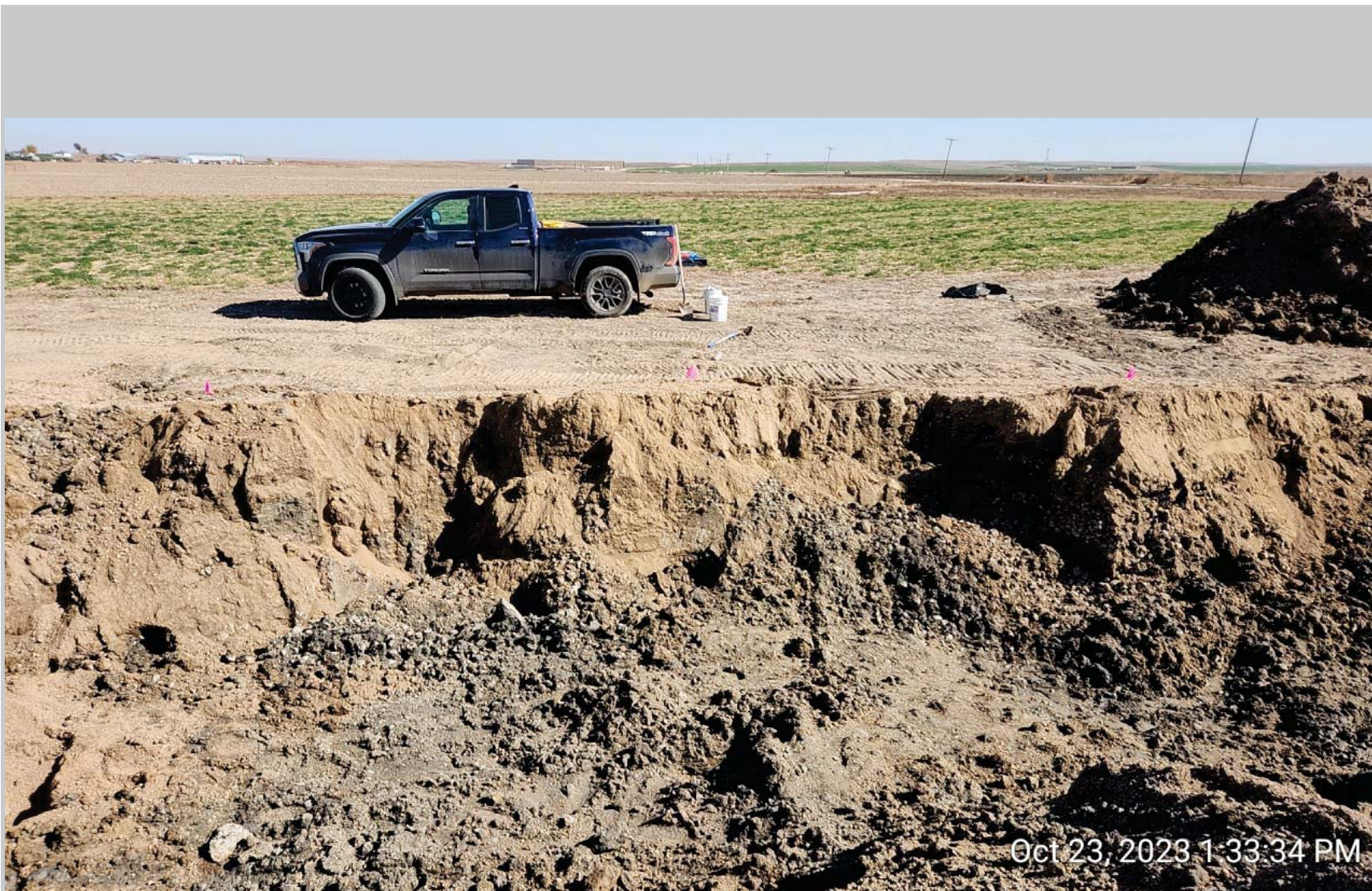
#13A - Volkens Coleman T4N-R64W-S23 L01 - Floor of 3rd PWV Excavation - PWVB03@7.0' - Staining/Odor Present - PID: 35.4ppm



Description:

#13B - Volkens Coleman T4N-R64W-S23 L01 - Floor of 3rd PWV Excavation - Groundwater at 7.5ft - GW03 - Odor Present - Sheen Present

Photo Log



Description:

#13C - Volkens Coleman T4N-R64W-S23 L01 - East Sidewall of 3rd PWV Excavation - PWVE03@6.0' - Staining/Odor Present - PID: 17.2ppm

Photo Log



Description:

#13D - Volkens Coleman T4N-R64W-S23 L01 - West Sidewall of 3rd PWV Excavation - PWVW03@6.0' - Staining/Odor Present - PID: 234.3ppm

Photo Log



Description:

#14A - Volkens Coleman T4N-R64W-S23 L01 - Floor of 4th PWV Excavation - PWVB04@7.0' - Staining/Odor Present - PID: 9.0ppm

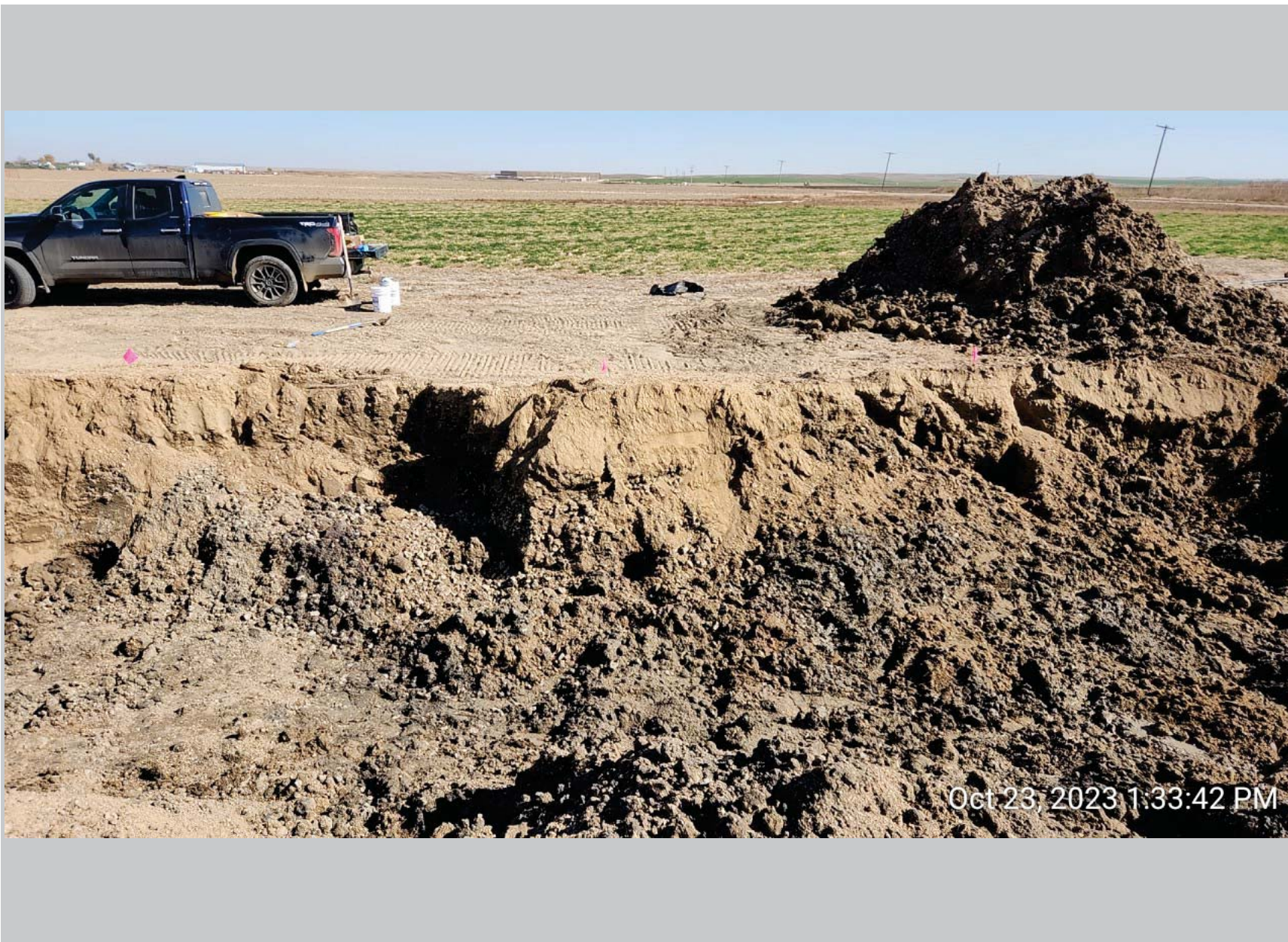
Photo Log



Description:

#14B - Volkens Coleman T4N-R64W-S23 L01 - Floor of 4th PWV Excavation - Groundwater at 7.5ft - GW04 - Odor Present - Sheen Present

Photo Log



Description:

#14C - Volkens Coleman T4N-R64W-S23 L01 - East Sidewall of 4th PWV Excavation - PWVE04@6.0' - Slight Odor - No Staining - PID: 3.9ppm

Photo Log



Description:

#14D - Volkens Coleman T4N-R64W-S23 L01 - West Sidewall of 4th PWV Excavation - PWVW04@6.0' - Staining/Odor Present - PID: 62.4ppm

Photo Log



Description:

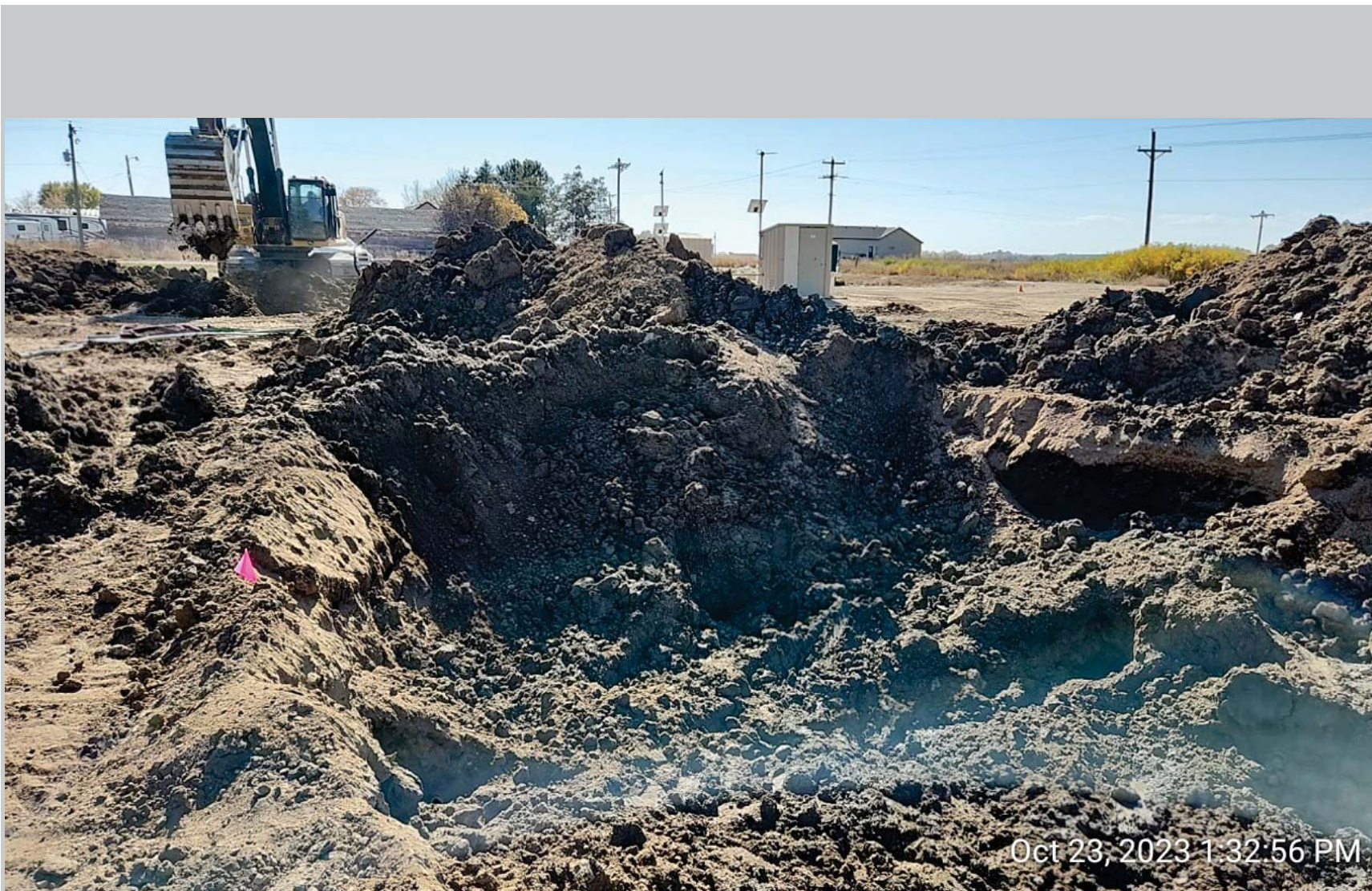
#15A - Volkens Coleman T4N-R64W-S23 L01 - Floor of 5th PWV Excavation - PWVB05@7.0' - Staining/Odor Present - PID: 8.5ppm



Description:

#15B - Volkens Coleman T4N-R64W-S23 L01 - Floor of 5th PWV Excavation - Groundwater at 7.5ft - GW05 - Odor Present - Sheen Present

Photo Log



Description:

#15C - Volkens Coleman T4N-R64W-S23 L01 - South Sidewall of 5th PWV Excavation - PWVS01@6.0' - No Impacts Noted - PID: 2.0ppm

Photo Log



Description:

#15D - Volkens Coleman T4N-R64W-S23 L01 - East Sidewall of 5th PWV Excavation - PWVE05@6.0' - No Impacts Noted - PID: 1.5ppm

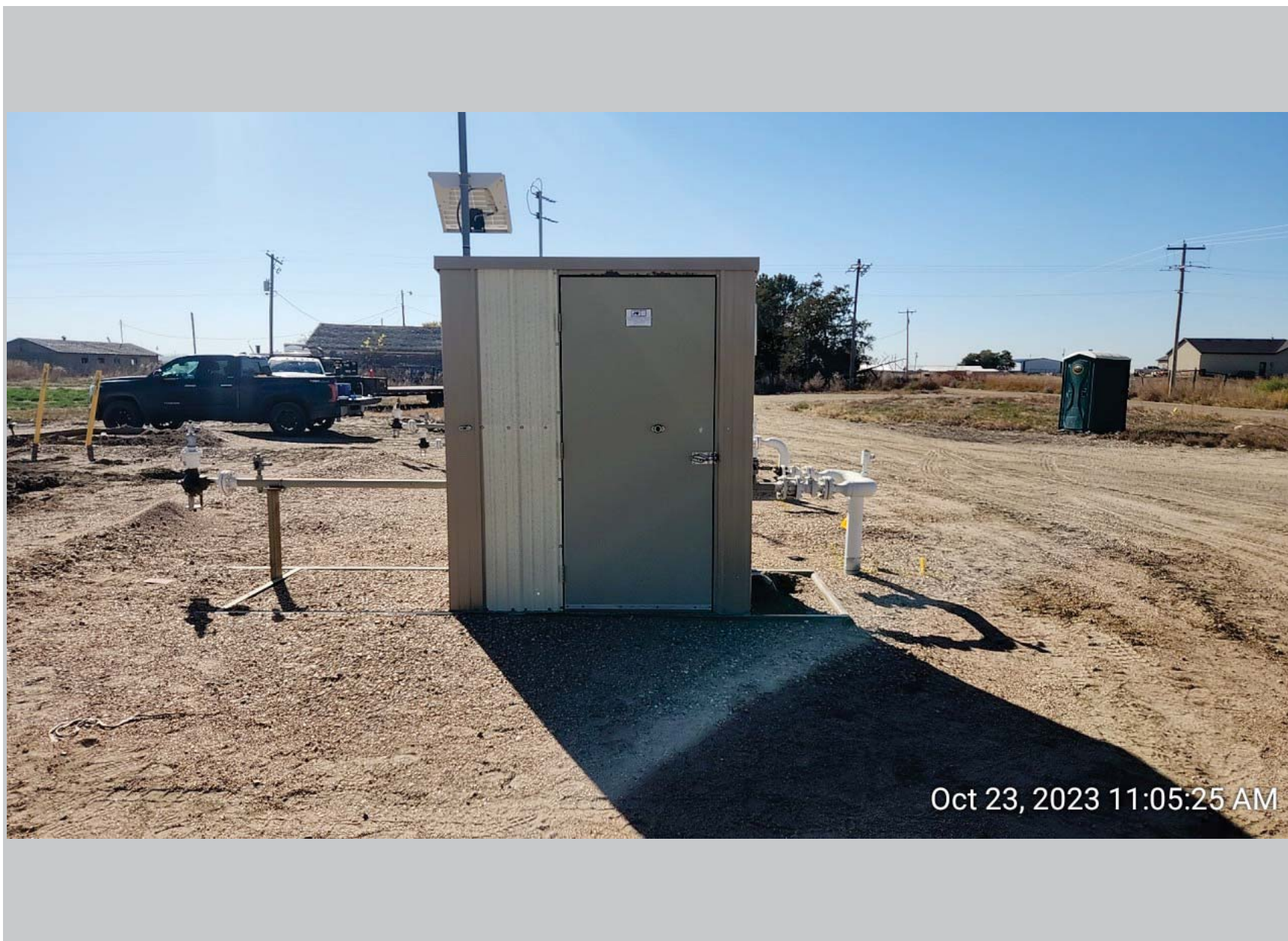
Photo Log



Description:

#15E - Volkens Coleman T4N-R64W-S23 L01 - West Sidewall of 5th PWV Excavation - PWVW05@6.0' - No Impacts Noted - PID: 1.6ppm

Photo Log



Description:

#16A - Volkens Coleman T4N-R64W-S23 L01 - Northern Third Party Meter Shed - MET01@6.0" - No Impacts Noted - PID: 0.0ppm

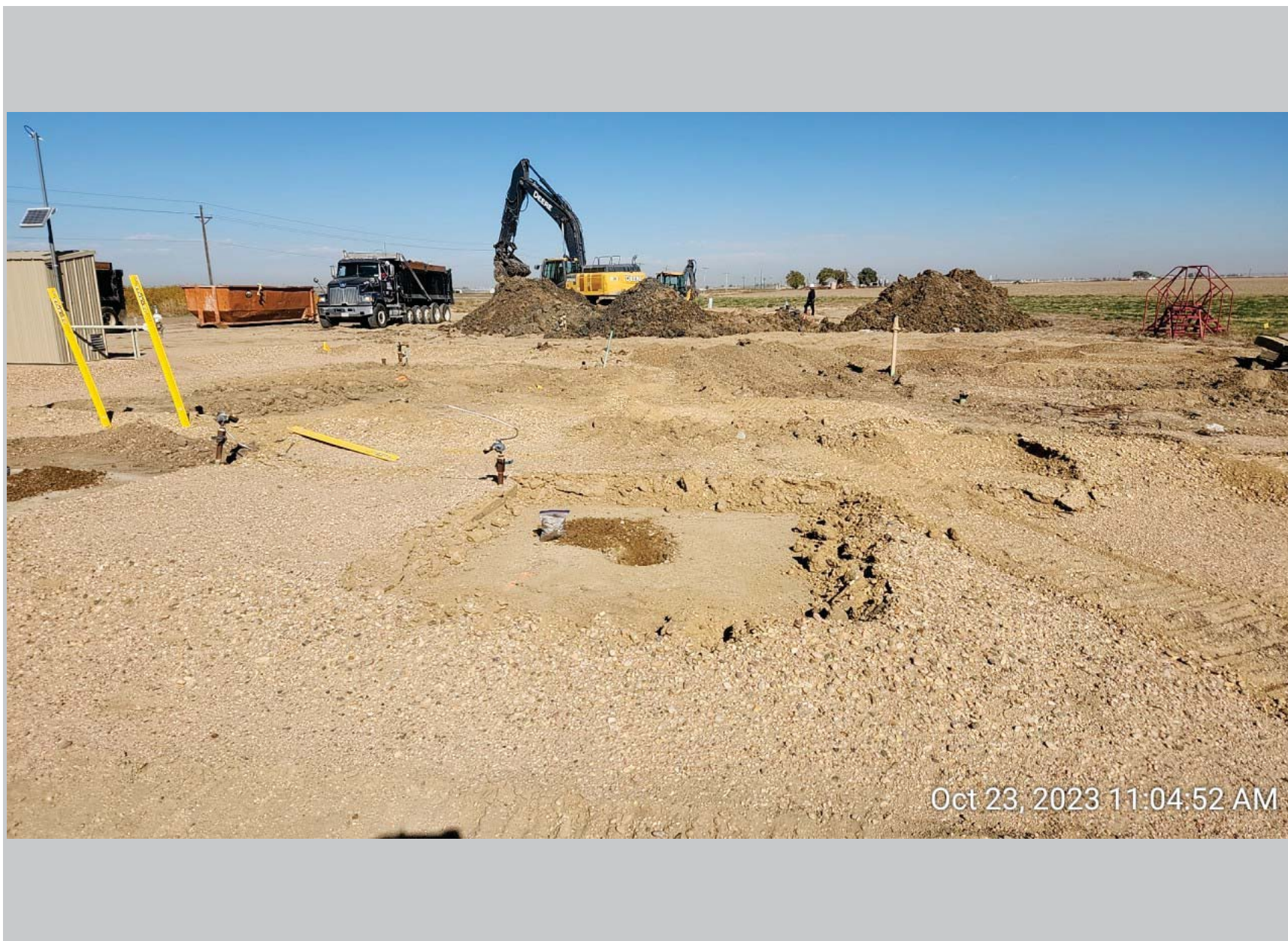
Photo Log



Description:

#17A - Volkens Coleman T4N-R64W-S23 L01 - Southern Third Party Meter Shed - MET02@6.0" - No Impacts Noted - PID: 0.0ppm

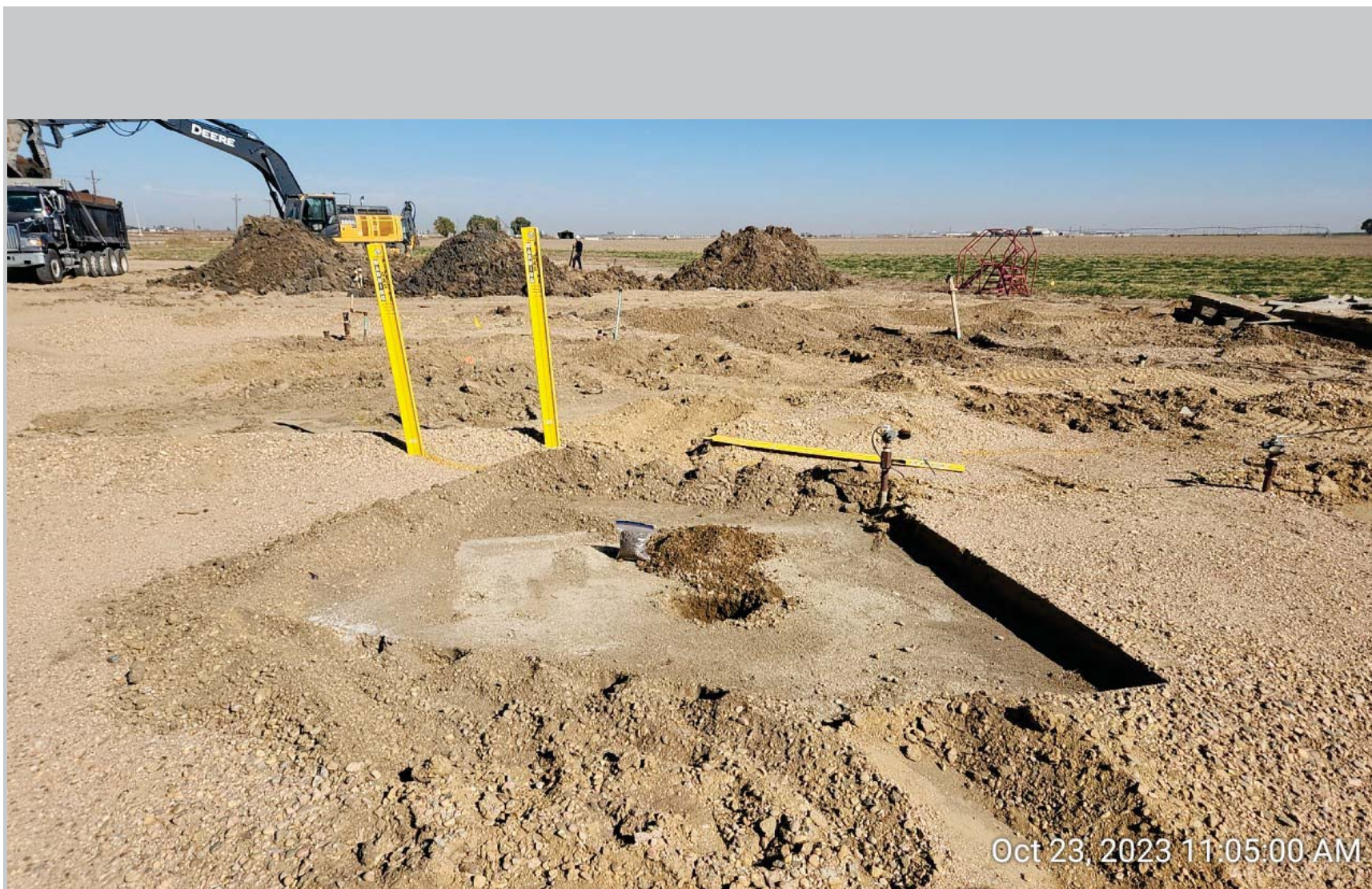
Photo Log



Description:

#18A - Volkens Coleman T4N-R64W-S23 L01 - Eastern Combustion Unit - ECD01@6.0" - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#19A - Volkens Coleman T4N-R64W-S23 L01 - Western Combustion Unit - ECD02@6.0" - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#20A - Volkens Coleman T4N-R64W-S23 L01 - 1st Local Background Sample Bore - Samples Collected at 0.5ft, 4.0ft and 6.5ft

Photo Log



Description:

#20B - Volkens Coleman T4N-R64W-S23 L01 - 2nd Local Background Sample Bore - Samples Collected at 0.5ft, 4.0ft and 6.5ft

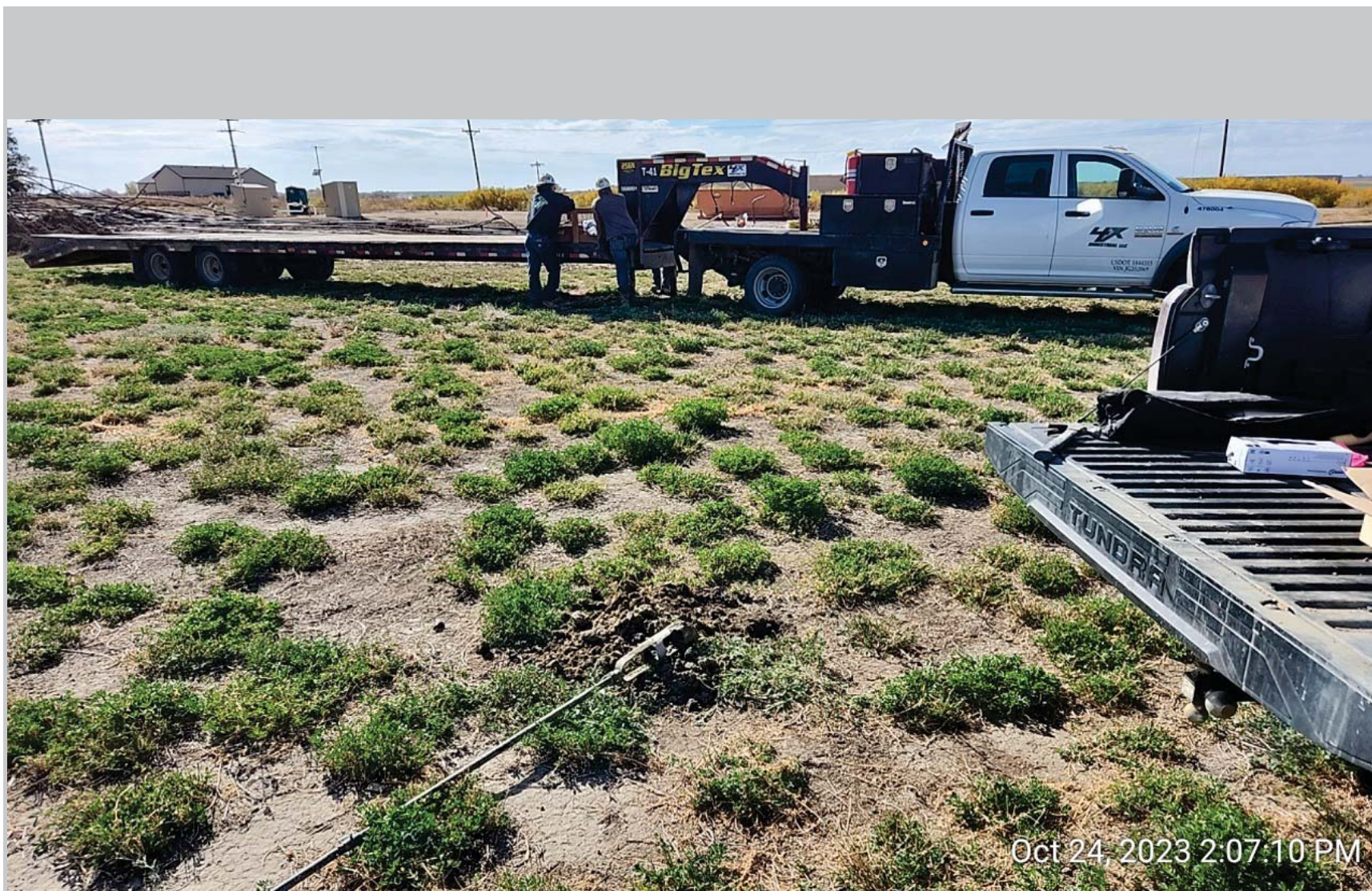
Photo Log



Description:

#20C - Volkens Coleman T4N-R64W-S23 L01 - 3rd Local Background Sample Bore - Samples Collected at 0.5ft, 4.0ft and 6.5ft

Photo Log



Description:

#20D - Volkens Coleman T4N-R64W-S23 L01 - 4th Local Background Sample Bore - Samples Collected at 0.5ft, 4.0ft and 6.5ft

Photo Log



Description:

#20E - Volkens Coleman T4N-R64W-S23 L01 - 5th Local Background Sample Bore - Samples Collected at 0.5ft, 4.0ft and 6.5ft

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 09, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Volkens Coleman T4N-R64W-S23 L01

Work Order #2310449

Enclosed are the results of analyses for samples received by Summit Scientific on 10/24/23 16:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01

Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@6.0"	2310449-01	Soil	10/24/23 00:00	10/24/23 16:05
AST02@6.0"	2310449-02	Soil	10/24/23 00:00	10/24/23 16:05
AST03@6.0"	2310449-03	Soil	10/24/23 00:00	10/24/23 16:05
AST04@6.0"	2310449-04	Soil	10/24/23 00:00	10/24/23 16:05
AST05@6.0"	2310449-05	Soil	10/24/23 00:00	10/24/23 16:05
SEP01@6.0"	2310449-06	Soil	10/23/23 00:00	10/24/23 16:05
SEP02@6.0"	2310449-07	Soil	10/23/23 00:00	10/24/23 16:05
SEP03@4.0'	2310449-08	Soil	10/23/23 00:00	10/24/23 16:05
SEP04@4.0'	2310449-09	Soil	10/23/23 00:00	10/24/23 16:05
SEP05@4.0'	2310449-10	Soil	10/23/23 00:00	10/24/23 16:05
PWVB01@7.0'	2310449-11	Soil	10/23/23 00:00	10/24/23 16:05
PWVB02@7.0'	2310449-12	Soil	10/23/23 00:00	10/24/23 16:05
PWVB03@7.0'	2310449-13	Soil	10/23/23 00:00	10/24/23 16:05
PWVB04@7.0'	2310449-14	Soil	10/23/23 00:00	10/24/23 16:05
PWVB05@7.0'	2310449-15	Soil	10/23/23 00:00	10/24/23 16:05
PWVN01@6.0'	2310449-16	Soil	10/23/23 00:00	10/24/23 16:05
PWVS01@6.0'	2310449-17	Soil	10/23/23 00:00	10/24/23 16:05
PWVE01@6.0'	2310449-18	Soil	10/23/23 00:00	10/24/23 16:05
PWVE02@6.0'	2310449-19	Soil	10/23/23 00:00	10/24/23 16:05
PWVE03@6.0'	2310449-20	Soil	10/23/23 00:00	10/24/23 16:05
PWVE04@6.0'	2310449-21	Soil	10/23/23 00:00	10/24/23 16:05
PWVE05@6.0'	2310449-22	Soil	10/23/23 00:00	10/24/23 16:05
PWVW01@6.0'	2310449-23	Soil	10/23/23 00:00	10/24/23 16:05
PWVW02@6.0'	2310449-24	Soil	10/23/23 00:00	10/24/23 16:05
PWVW03@6.0'	2310449-25	Soil	10/23/23 00:00	10/24/23 16:05
PWVW04@6.0'	2310449-26	Soil	10/23/23 00:00	10/24/23 16:05
PWVW05@6.0'	2310449-27	Soil	10/23/23 00:00	10/24/23 16:05

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 - Volkens Coleman T4N-R64W-S23 L01

Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

ANALYTICAL REPORT FOR SAMPLES


Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	2310449-28	Water	10/23/23 00:00	10/24/23 16:05
GW02	2310449-29	Water	10/23/23 00:00	10/24/23 16:05
GW03	2310449-30	Water	10/23/23 00:00	10/24/23 16:05
GW04	2310449-31	Water	10/23/23 00:00	10/24/23 16:05
GW05	2310449-32	Water	10/23/23 00:00	10/24/23 16:05

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 Env		Send Data To: Project Manager: Paul Henehan		Send Invoice To: Company: Noble	
Address:		E-Mail: Paulh@fremontenv.com		Project Name/Location: Coleman C 23-29D	
City/State/Zip:		jeff@fremontenv.com Ethamb@fremontenv.com		AFE#:	
Phone:		Project Name: Volkens Coleman TYN-R64W-523 W		PO/Billing Codes: UWRWE-A2617-ABN	
Sampler Name: JG		Project Number:		Contact:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Other	Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil			BTEX + N	TMBs (915)	DRO,ORO,GR0	PAHs (915)	EC,PH,SAR,Baron	Metals (915)	
1	AST01C6.0"	10/24/23		2			X			X			X	X	X	X	X	X	
2	AST02C6.0"																		
3	AST03C6.0"																		
4	AST04C6.0"																		
5	AST05C6.0"	10/24/23																	
6	PO2001 SEP01C6.0"	10/23/23																	
7	PO2002 SEP02C6.0"																		
8	PO2003 SEP03C4.0"																		
9	PO2004 SEP04C4.0"																		
10	SEP05C4.0"																		
11	PWVB01C7.0'																		
12	PWVB02C7.0'																		
13	PWVB03C7.0'																		
14	PWVB04C7.0'																		
15	PWVB05C7.0'																		

Relinquished by: 	Date/Time: 10/24/23 1605	Received by: John Wrd	Date/Time: 10/24/23 16:05	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	X Field Turb.	
Temperature Upon Receipt: 19.9	Corrected Temperature	IR gun #:	2	HNO3 lot #:		

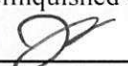
SUMMIT SCIENTIFIC

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

Lab ID	Page 2 of 3
2310449.2	

Client: Fremont Env	Send Data To: Project Manager: Paul Henahan	Send Invoice To: Company: Noble
Address:	E-Mail: Paul@fremontenv.com	Project Name/Location: Coleman C 23-29D
City/State/Zip:	jeff@fremontenv.com Ethem@fremontenv.com	AFE#:
Phone:	Project Name: VolKens Coleman TYN-R64W-S23 WJ	PO/Billing Codes: UWRWE-2617-ABN
Sampler Name: JG	Project Number:	Contact:

				Preservative				Matrix				Analysis Requested						Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX + N	TMS (915)	DRO,ORO,GRO	PAHs (915)	EC,PH,SAR,BOR	Metals (915)	
1	PWVNO1@6.0'	10/23/23		2			X			X			X	X	X	X	X	X	
2	PWVSO1@6.0'																		
3	PWVE01@6.0'																		
4	PWVE02@6.0'																		
5	PWVE03@6.0'																		
6	PWVE04@6.0'																		
7	PWVE05@6.0'																		
8	PWVW01@6.0'																		
9	PWVW02@6.0'																		
10	PWVW03@6.0'																		
11	PWVW04@6.0'																		
12	PWVW05@6.0'			2			X			X					X	X	X	X	
13	GW01			3	X				X										
14	GW02			3	X				X										
15	GW03			3	X				X										

Relinquished by: 	Date/Time: 10/24/23 1605	Received by: Jan Wrd	Date/Time: 10/24/23 16:05	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	X Field Turb.	
Temperature Upon Receipt: 19.9	Corrected Temperature	IR gun #: 2	HNO3 lot #:			

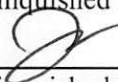
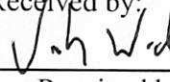
SUMMIT SCIENTIFIC

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

Lab ID	Page 3 of 3
2310449.3	

Client: Fremont Env		Send Data To:		Send Invoice To:	
Address:		Project Manager: Paul Henehan		Company: Nobe	
City/State/Zip:		E-Mail: Paulh@fremontenv.com		Project Name/Location: Coleman C 23-290	
Phone:		jeffg@fremontenv.com Ethanh@fremontenv.com		AFE#:	
Sampler Name: JG		Project Name: Volkens Coleman TYN-R64W-S22 L01		PO/Billing Codes: UWRWE-A2617-ABN	
		Project Number:		Contact:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)					
1	GW04	10/23/23		3	X				X				X	X					
2	GW05	10/23/23		3	X				X				X	X					
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: 	Date/Time: 10/24/23 1605	Received by: 	Date/Time: 10/24/23 1605	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	<input checked="" type="checkbox"/> Field Turb.	
Temperature Upon Receipt: 19.9	Corrected Temperature	IR gun #: 2	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2310449Client: Noble FremontClient Project ID: Volkens Coleman T4N-R64V-S23 W1Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐Airbill #:
☒ ☐ ☐ ☐ ☐

Matrix (Check all that apply)

Air ☐Soil/Solid ☒Water ☒Other ☐

Temp (°C)

19.9

Thermometer #

2

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

John W. L.

Custodian Printed Name

10/24/23 16:08

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST01@6.0"
2310449-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0376	94.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.96	63.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST01@6.0"
2310449-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0183	54.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0238	71.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0028	11/01/23	11/07/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 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 - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST01@6.0"
2310449-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.901	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	33.9	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.05	0.400	"	"	"	"	"	"
Lead	2.21	0.200	"	"	"	"	"	"
Nickel	1.46	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	4.70	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1089	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.7	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	11.9	0.0500	"	"	"	"	"	"	
Sodium	9.38	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.372	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST01@6.0"
2310449-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.1		%	1	BGJ1256	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.115	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.61		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST02@6.0"
2310449-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.016	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.030	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.29	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.068	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.049	0.0050	"	"	"	"	"	"	
Naphthalene	0.0052	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.6	0.50	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0383	95.8 %	50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0401	100 %	50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0395	98.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<i>Surrogate: o-Terphenyl</i>	8.39	67.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST02@6.0"
2310449-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0119	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0326	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0172	51.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0208	62.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0028	11/01/23	11/07/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST02@6.0"
2310449-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.11	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	73.7	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.26	0.400	"	"	"	"	"	"
Lead	7.27	0.200	"	"	"	"	"	"
Nickel	2.61	0.400	"	"	"	"	"	"
Silver	0.0276	0.0200	"	"	"	"	"	"
Zinc	11.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1089	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	69.4	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	20.7	0.0500	"	"	"	"	"	"	
Sodium	47.6	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.29	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST02@6.0"
2310449-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.5		%	1	BGJ1256	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.272	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.84		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST03@6.0"
2310449-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0035	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.28	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.049	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.027	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	3.1	0.50	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0382	95.6 %	50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0399	99.8 %	50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0410	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>	7.67	61.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST03@6.0"
2310449-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0128	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0215	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.00772	0.00500	"	"	"	"	"	"	
Chrysene	0.00599	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.00974	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0190	57.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0199	59.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0028	11/01/23	11/07/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST03@6.0"
2310449-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.923	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	100	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.73	0.400	"	"	"	"	"	"
Lead	8.01	0.200	"	"	"	"	"	"
Nickel	2.70	0.400	"	"	"	"	"	"
Silver	0.0343	0.0200	"	"	"	"	"	"
Zinc	12.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1089	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	57.0	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	26.1	0.0500	"	"	"	"	"	"	
Sodium	47.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.29	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST03@6.0"
2310449-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.6		%	1	BGJ1256	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.290	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST04@6.0"
2310449-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0385	96.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0406	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0389	97.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.67	61.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST04@6.0"
2310449-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0146	43.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0151	45.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0028	11/01/23	11/07/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST04@6.0"
2310449-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.940	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	92.4	0.400	"	"	"	"	"	"
Cadmium	0.216	0.200	"	"	"	"	"	"
Copper	4.14	0.400	"	"	"	"	"	"
Lead	7.24	0.200	"	"	"	"	"	"
Nickel	2.66	0.400	"	"	"	"	"	"
Silver	0.0323	0.0200	"	"	"	"	"	"
Zinc	12.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1089	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	32.7	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	11.0	0.0500	"	"	"	"	"	"	
Sodium	29.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.14	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST04@6.0"
2310449-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.9	%	1	BGJ1256	10/31/23	11/01/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.282	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.95		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST05@6.0"
2310449-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0392	98.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0406	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0393	98.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.98	63.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST05@6.0"
2310449-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0146	43.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0171	51.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0028	11/01/23	11/07/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST05@6.0"
2310449-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.959	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	86.0	0.400	"	"	"	"	"	"
Cadmium	0.218	0.200	"	"	"	"	"	"
Copper	5.52	0.400	"	"	"	"	"	"
Lead	6.78	0.200	"	"	"	"	"	"
Nickel	2.53	0.400	"	"	"	"	"	"
Silver	0.0319	0.0200	"	"	"	"	"	"
Zinc	16.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1089	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	37.4	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	10.4	0.0500	"	"	"	"	"	"	
Sodium	47.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.78	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

AST05@6.0"
2310449-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.5	%	1	BGJ1256	10/31/23	11/01/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.429	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.81		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP01@6.0"
2310449-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0376	93.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.64	61.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP01@6.0"
2310449-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0149	44.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0158	47.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0028	11/01/23	11/07/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP01@6.0"
2310449-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.904	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	81.1	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.05	0.400	"	"	"	"	"	"
Lead	6.23	0.200	"	"	"	"	"	"
Nickel	2.30	0.400	"	"	"	"	"	"
Silver	0.0257	0.0200	"	"	"	"	"	"
Zinc	10.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1089	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	46.1	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	14.1	0.0500	"	"	"	"	"	"	
Sodium	4.39	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.145	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP01@6.0"
2310449-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.6		%	1	BGJ1256	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.109	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.58		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP02@6.0"
2310449-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0375	93.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0384	96.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.48	59.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP02@6.0"
2310449-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0157	47.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0181	54.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0028	11/01/23	11/07/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP02@6.0"
2310449-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.08	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	65.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.93	0.400	"	"	"	"	"	"
Lead	4.66	0.200	"	"	"	"	"	"
Nickel	2.25	0.400	"	"	"	"	"	"
Silver	0.0210	0.0200	"	"	"	"	"	"
Zinc	8.95	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1089	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	60.8	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	19.3	0.0500	"	"	"	"	"	"	
Sodium	4.75	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.136	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP02@6.0"
2310449-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.7		%	1	BGJ1256	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0992	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.56		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP03@4.0'
2310449-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0371	92.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.61	60.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP03@4.0'
2310449-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0137	41.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0156	46.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0028	11/01/23	11/07/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
PO Box 1289
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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP03@4.0'
2310449-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.971	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	79.7	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.01	0.400	"	"	"	"	"	"
Lead	5.74	0.200	"	"	"	"	"	"
Nickel	2.48	0.400	"	"	"	"	"	"
Silver	0.0224	0.0200	"	"	"	"	"	"
Zinc	18.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1089	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	70.5	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	16.6	0.0500	"	"	"	"	"	"	
Sodium	24.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.674	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP03@4.0'
2310449-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.0		%	1	BGJ1256	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.194	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.60		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP04@4.0'
2310449-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0375	93.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0406	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.19	65.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP04@4.0'
2310449-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0155	46.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0179	53.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP04@4.0'
2310449-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.872	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	87.0	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	1.97	0.400	"	"	"	"	"	"
Lead	3.46	0.200	"	"	"	"	"	"
Nickel	1.88	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	7.39	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.6	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	7.54	0.0500	"	"	"	"	"	"	
Sodium	6.46	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.278	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP04@4.0'
2310449-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.9		%	1	BGJ1256	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.153	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.02		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP05@4.0'
2310449-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0369	92.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.06	72.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP05@4.0'
2310449-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0173	51.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0195	58.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PO Box 1289
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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP05@4.0'
2310449-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.849	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	85.6	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.81	0.400	"	"	"	"	"	"
Lead	5.44	0.200	"	"	"	"	"	"
Nickel	2.33	0.400	"	"	"	"	"	"
Silver	0.0264	0.0200	"	"	"	"	"	"
Zinc	9.57	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.7	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	9.55	0.0500	"	"	"	"	"	"	
Sodium	11.4	0.0500	"	"	"	"	"	"	


Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.476	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

SEP05@4.0'
2310449-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.5		%	1	BGJ1256	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.173	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.34		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB01@7.0'
2310449-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.0076	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.072	0.0050	"	"	"	"	"	"	
Naphthalene	0.0042	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	51	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0379	94.7 %	50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0365	91.2 %	50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0492	123 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	210	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>	9.86	78.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB01@7.0'
2310449-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	0.00649	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0208	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0126	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0102	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0107	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.205	0.00500	"	"	"	"	"	"	E
2-Methylnaphthalene	0.258	0.00500	"	"	"	"	"	"	E

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0278	83.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0238	71.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB01@7.0'
2310449-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.788	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	50.4	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.40	0.400	"	"	"	"	"	"
Lead	3.50	0.200	"	"	"	"	"	"
Nickel	1.88	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	8.72	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	55.4	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	11.8	0.0500	"	"	"	"	"	"	
Sodium	15.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.484	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB01@7.0'
2310449-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	86.4			%	1	BGJ1256	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.192	0.0100		mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	9.39			pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB02@7.0'
2310449-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0366	91.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0400	99.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.10	72.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB02@7.0'
2310449-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.00518	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0126	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0167	50.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0213	64.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB02@7.0'
2310449-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.910	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	50.6	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.52	0.400	"	"	"	"	"	"
Lead	3.59	0.200	"	"	"	"	"	"
Nickel	1.92	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	10.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	116	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	21.7	0.0500	"	"	"	"	"	"	
Sodium	36.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.809	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB02@7.0'
2310449-12 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.8		%	1	BGJ1256	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.206	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.46		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB03@7.0'
2310449-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0364	91.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0391	97.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.16	73.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB03@7.0'
2310449-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0164	49.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0215	64.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB03@7.0'
2310449-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.860	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	99.9	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.38	0.400	"	"	"	"	"	"
Lead	6.64	0.200	"	"	"	"	"	"
Nickel	2.62	0.400	"	"	"	"	"	"
Silver	0.0297	0.0200	"	"	"	"	"	"
Zinc	9.95	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	56.8	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	12.3	0.0500	"	"	"	"	"	"	
Sodium	2.73	0.0500	"	"	"	"	"	"	


Calculated Analysis

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0856	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB03@7.0'
2310449-13 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	82.1			%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.137	0.0100		mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.09			pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB04@7.0'
2310449-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0362	90.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0400	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0387	96.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.87	78.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB04@7.0'
2310449-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0163	48.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0178	53.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB04@7.0'
2310449-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.345	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	37.9	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.98	0.400	"	"	"	"	"	"
Lead	6.03	0.200	"	"	"	"	"	"
Nickel	1.90	0.400	"	"	"	"	"	"
Silver	0.0256	0.0200	"	"	"	"	"	"
Zinc	10.5	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	131	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	22.3	0.0500	"	"	"	"	"	"	
Sodium	39.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.829	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB04@7.0'
2310449-14 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.9		%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.200	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	10.4		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB05@7.0'
2310449-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.0040	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0059	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.038	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.051	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.030	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0364	91.0 %	50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0410	102 %	50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0384	96.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<i>Surrogate: o-Terphenyl</i>	10.4	82.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB05@7.0'
2310449-15 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0168	50.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0197	59.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB05@7.0'
2310449-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.659	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	121	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.36	0.400	"	"	"	"	"	"
Lead	7.48	0.200	"	"	"	"	"	"
Nickel	2.80	0.400	"	"	"	"	"	"
Silver	0.0319	0.0200	"	"	"	"	"	"
Zinc	11.5	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	357	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	54.2	0.0500	"	"	"	"	"	"	
Sodium	63.6	0.0500	"	"	"	"	"	"	


Calculated Analysis

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.829	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific



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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVB05@7.0'
2310449-15 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	74.0		%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.312	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	10.9		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVN01@6.0'
2310449-16 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0371	92.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0393	98.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.39	75.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVN01@6.0'
2310449-16 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0164	49.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0173	51.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVN01@6.0'
2310449-16 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.893	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	83.9	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.49	0.400	"	"	"	"	"	"
Lead	6.46	0.200	"	"	"	"	"	"
Nickel	2.57	0.400	"	"	"	"	"	"
Silver	0.0258	0.0200	"	"	"	"	"	"
Zinc	11.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	72.8	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	13.2	0.0500	"	"	"	"	"	"	
Sodium	14.2	0.0500	"	"	"	"	"	"	


Calculated Analysis

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.402	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVN01@6.0'
2310449-16 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.3		%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.151	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.51		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVS01@6.0'
2310449-17 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0372	93.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0381	95.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.09	72.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVS01@6.0'
2310449-17 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0198	59.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0232	69.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVS01@6.0'
2310449-17 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.845	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	96.5	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.93	0.400	"	"	"	"	"	"
Lead	5.96	0.200	"	"	"	"	"	"
Nickel	2.33	0.400	"	"	"	"	"	"
Silver	0.0240	0.0200	"	"	"	"	"	"
Zinc	10.1	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	62.8	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	13.8	0.0500	"	"	"	"	"	"	
Sodium	2.17	0.0500	"	"	"	"	"	"	


Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0646	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVS01@6.0'
2310449-17 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.9		%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.123	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.32		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE01@6.0'
2310449-18 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0366	91.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0387	96.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.4	82.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Reported:
11/09/23 08:30

PWVE01@6.0'
2310449-18 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0143	42.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0176	52.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE01@6.0'
2310449-18 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.744	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	76.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.74	0.400	"	"	"	"	"	"
Lead	5.19	0.200	"	"	"	"	"	"
Nickel	2.70	0.400	"	"	"	"	"	"
Silver	0.0231	0.0200	"	"	"	"	"	"
Zinc	9.03	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	71.1	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	11.8	0.0500	"	"	"	"	"	"	
Sodium	31.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.900	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE01@6.0'
2310449-18 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	76.3		%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.232	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.34		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE02@6.0'
2310449-19 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0364	91.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0406	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.95	71.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE02@6.0'
2310449-19 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0112	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0261	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0166	49.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0200	60.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE02@6.0'
2310449-19 (Soil)

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Total Metals by EPA 6020B

Arsenic	1.03	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	96.3	0.400	"	"	"	"	"	"
Cadmium	0.205	0.200	"	"	"	"	"	"
Copper	3.60	0.400	"	"	"	"	"	"
Lead	11.8	0.200	"	"	"	"	"	"
Nickel	2.91	0.400	"	"	"	"	"	"
Silver	0.0387	0.0200	"	"	"	"	"	"
Zinc	13.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	42.7	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	6.21	0.0500	"	"	"	"	"	"	
Sodium	2.06	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0780	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE02@6.0'
2310449-19 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	75.4	%	1	BGJ1266	10/31/23	11/01/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.204	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.51		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE03@6.0'
2310449-20 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1009	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.60	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0362	90.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0393	98.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1013	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.2	81.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Reported:
11/09/23 08:30

PWVE03@6.0'
2310449-20 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0970	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0158	47.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0203	61.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE03@6.0'
2310449-20 (Soil)

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Total Metals by EPA 6020B

Arsenic	0.766	0.200	mg/kg dry	1	BGJ1243	10/31/23	11/02/23	EPA 6020B
Barium	79.9	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.63	0.400	"	"	"	"	"	"
Lead	6.35	0.200	"	"	"	"	"	"
Nickel	2.59	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	10.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	33.4	0.0500	mg/L dry	1	BGJ1094	10/26/23	11/02/23	EPA 6020B	
Magnesium	7.12	0.0500	"	"	"	"	"	"	
Sodium	4.92	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.202	0.00100	units	1	BGK0070	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE03@6.0'
2310449-20 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	76.4		%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0925	0.0100	mmhos/cm	1	BGJ1135	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.78		pH Units	1	BGJ1133	10/27/23	10/30/23	EPA 9045D	

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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE04@6.0'
2310449-21 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1010	10/25/23	10/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0428	107 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0414	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1012	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.96	63.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Reported:
11/09/23 08:30

PWVE04@6.0'
2310449-21 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0972	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0165	49.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0164	49.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE04@6.0'
2310449-21 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.44	0.200	mg/kg dry	1	BGJ1244	10/31/23	11/02/23	EPA 6020B
Barium	106	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	6.41	0.400	"	"	"	"	"	"
Lead	7.58	0.200	"	"	"	"	"	"
Nickel	5.03	0.400	"	"	"	"	"	"
Silver	0.0324	0.0200	"	"	"	"	"	"
Zinc	20.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.4	0.0500	mg/L dry	1	BGJ1086	10/26/23	10/31/23	EPA 6020B	
Magnesium	9.12	0.0500	"	"	"	"	"	"	
Sodium	6.85	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.290	0.00100	units	1	BGK0018	11/01/23	11/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE04@6.0'
2310449-21 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	76.5			%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.356	0.0100		mmhos/cm	1	BGJ1105	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.16			pH Units	1	BGJ1103	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE05@6.0'
2310449-22 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1010	10/25/23	10/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0434	108 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0409	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0408	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1012	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.59	68.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE05@6.0'
2310449-22 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0972	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0226	67.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0236	70.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE05@6.0'
2310449-22 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.71	0.200	mg/kg dry	1	BGJ1244	10/31/23	11/02/23	EPA 6020B
Barium	57.3	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.78	0.400	"	"	"	"	"	"
Lead	4.91	0.200	"	"	"	"	"	"
Nickel	3.69	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	14.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.5	0.0500	mg/L dry	1	BGJ1086	10/26/23	10/31/23	EPA 6020B	
Magnesium	7.25	0.0500	"	"	"	"	"	"	
Sodium	7.82	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.339	0.00100	units	1	BGK0018	11/01/23	11/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVE05@6.0'
2310449-22 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	81.7			%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.175	0.0100		mmhos/cm	1	BGJ1105	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.12			pH Units	1	BGJ1103	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW01@6.0'
2310449-23 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1010	10/25/23	10/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0425	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0393	98.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1012	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.60	68.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW01@6.0'
2310449-23 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0972	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0229	68.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0244	73.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW01@6.0'
2310449-23 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.53	0.200	mg/kg dry	1	BGJ1244	10/31/23	11/02/23	EPA 6020B
Barium	58.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.64	0.400	"	"	"	"	"	"
Lead	4.52	0.200	"	"	"	"	"	"
Nickel	3.69	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	15.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	63.6	0.0500	mg/L dry	1	BGJ1086	10/26/23	10/31/23	EPA 6020B	
Magnesium	17.1	0.0500	"	"	"	"	"	"	
Sodium	20.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.598	0.00100	units	1	BGK0018	11/01/23	11/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW01@6.0'
2310449-23 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.6		%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.187	0.0100	mmhos/cm	1	BGJ1105	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.56		pH Units	1	BGJ1103	10/27/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW02@6.0'
2310449-24 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0062	0.0020	mg/kg	1	BGJ1010	10/25/23	10/27/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.40	0.050	"	10	"	"	10/26/23	"	
Xylenes (total)	1.1	0.010	"	1	"	"	10/27/23	"	
1,2,4-Trimethylbenzene	0.40	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.88	0.0050	"	"	"	"	"	"	E
Naphthalene	0.18	0.038	"	10	"	"	10/26/23	"	
Gasoline Range Hydrocarbons	220	5.0	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0455	114 %	50-150		"	"	10/27/23	"	
Surrogate: Toluene-d8	0.0376	94.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0588	147 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	60	50	mg/kg	1	BGJ1012	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.52	68.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW02@6.0'
2310449-24 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0972	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.153	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.341	0.00500	"	"	"	"	"	"	E

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0206	61.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0232	69.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW02@6.0'
2310449-24 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.43	0.200	mg/kg dry	1	BGJ1244	10/31/23	11/02/23	EPA 6020B
Barium	58.1	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.17	0.400	"	"	"	"	"	"
Lead	4.32	0.200	"	"	"	"	"	"
Nickel	3.33	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	14.1	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	163	0.0500	mg/L dry	1	BGJ1086	10/26/23	10/31/23	EPA 6020B	
Magnesium	26.5	0.0500	"	"	"	"	"	"	
Sodium	29.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.563	0.00100	units	1	BGK0018	11/01/23	11/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW02@6.0'
2310449-24 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.5		%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.160	0.0100	mmhos/cm	1	BGJ1105	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.56		pH Units	1	BGJ1103	10/27/23	10/30/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW03@6.0'
2310449-25 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ1010	10/25/23	10/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0057	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.022	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.22	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	9.8	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0430	107 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0458	115 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1012	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.95	71.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW03@6.0'
2310449-25 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0972	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0101	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0224	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0175	52.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0185	55.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW03@6.0'
2310449-25 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.23	0.200	mg/kg dry	1	BGJ1244	10/31/23	11/02/23	EPA 6020B
Barium	128	0.400	"	"	"	"	"	"
Cadmium	0.202	0.200	"	"	"	"	"	"
Copper	7.17	0.400	"	"	"	"	"	"
Lead	8.70	0.200	"	"	"	"	"	"
Nickel	5.66	0.400	"	"	"	"	"	"
Silver	0.0369	0.0200	"	"	"	"	"	"
Zinc	21.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	73.5	0.0500	mg/L dry	1	BGJ1086	10/26/23	10/31/23	EPA 6020B	
Magnesium	19.4	0.0500	"	"	"	"	"	"	
Sodium	42.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.13	0.00100	units	1	BGK0018	11/01/23	11/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW03@6.0'
2310449-25 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.5	%	1	BGJ1266	10/31/23	11/01/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.235	0.0100	mmhos/cm	1	BGJ1105	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.29		pH Units	1	BGJ1103	10/27/23	10/30/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW04@6.0'
2310449-26 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1010	10/25/23	10/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0418	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1012	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.05	64.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW04@6.0'
2310449-26 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0972	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0179	53.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0183	55.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW04@6.0'
2310449-26 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.10	0.200	mg/kg dry	1	BGJ1244	10/31/23	11/02/23	EPA 6020B
Barium	63.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.60	0.400	"	"	"	"	"	"
Lead	5.23	0.200	"	"	"	"	"	"
Nickel	3.82	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	16.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	45.1	0.0500	mg/L dry	1	BGJ1086	10/26/23	10/31/23	EPA 6020B	
Magnesium	13.3	0.0500	"	"	"	"	"	"	
Sodium	25.6	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.861	0.00100	units	1	BGK0018	11/01/23	11/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW04@6.0'
2310449-26 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.0		%	1	BGJ1266	10/31/23	11/01/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.191	0.0100	mmhos/cm	1	BGJ1105	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.69		pH Units	1	BGJ1103	10/27/23	10/30/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW05@6.0'
2310449-27 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGJ1010	10/25/23	10/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0422	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0408	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ1012	10/25/23	10/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.29	58.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW05@6.0'
2310449-27 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0972	10/25/23	10/26/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0189	56.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0211	63.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0029	11/01/23	11/04/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PWVW05@6.0'
2310449-27 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	4.26	0.200	mg/kg dry	1	BGJ1244	10/31/23	11/02/23	EPA 6020B
Barium	85.3	0.400	"	"	"	"	"	"
Cadmium	0.215	0.200	"	"	"	"	"	"
Copper	6.85	0.400	"	"	"	"	"	"
Lead	8.18	0.200	"	"	"	"	"	"
Nickel	5.19	0.400	"	"	"	"	"	"
Silver	0.0298	0.0200	"	"	"	"	"	"
Zinc	23.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1090	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.0	0.0500	mg/L dry	1	BGJ1086	10/26/23	10/31/23	EPA 6020B	
Magnesium	11.4	0.0500	"	"	"	"	"	"	
Sodium	57.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.02	0.00100	units	1	BGK0018	11/01/23	11/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A2617-ABN
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Reported:
11/09/23 08:30

PWVW05@6.0'
2310449-27 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	80.5	%	1	BGJ1266	10/31/23	11/01/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.142	0.0100	mmhos/cm	1	BGJ1105	10/27/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.37		pH Units	1	BGJ1103	10/27/23	10/30/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

GW01
2310449-28 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	1.5	1.0		ug/l	1	BGJ1081	10/26/23	10/26/23	EPA 8260B	
Toluene	1.3	1.0		"	"	"	"	"	"	
Ethylbenzene	6.4	1.0		"	"	"	"	"	"	
Xylenes (total)	82	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	50	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	27	1.0		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	12.6	94.2 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	15.1	113 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	14.3	107 %		21-167		"	"	"	"	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

GW02
2310449-29 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	230	1.0		ug/l	1	BGJ1081	10/26/23	10/26/23	EPA 8260B	E
Toluene	32	1.0		"	"	"	"	"	"	
Ethylbenzene	51	1.0		"	"	"	"	"	"	
Xylenes (total)	340	2.0		"	"	"	"	"	"	
Naphthalene	8.0	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	110	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	47	1.0		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	12.8	95.8 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	13.7	103 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	13.7	103 %		21-167		"	"	"	"	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

GW03
2310449-30 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	88	1.0		ug/l	1	BGJ1081	10/26/23	10/26/23	EPA 8260B	
Toluene	30	1.0		"	"	"	"	"	"	
Ethylbenzene	68	1.0		"	"	"	"	"	"	
Xylenes (total)	730	200		"	100	"	"	10/27/23	"	
Naphthalene	17	1.0		"	1	"	"	10/26/23	"	
1,2,4-Trimethylbenzene	250	1.0		"	"	"	"	"	"	E
1,3,5-Trimethylbenzene	150	1.0		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	12.5	93.7 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	13.8	104 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	14.3	107 %		21-167		"	"	"	"	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

GW04
2310449-31 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	110	1.0		ug/l	1	BGJ1081	10/26/23	10/26/23	EPA 8260B	
Toluene	5.4	1.0		"	"	"	"	"	"	
Ethylbenzene	33	1.0		"	"	"	"	"	"	
Xylenes (total)	240	2.0		"	"	"	"	"	"	
Naphthalene	8.3	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	89	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	37	1.0		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.1	98.2 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	13.6	102 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	13.5	102 %		21-167		"	"	"	"	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

GW05
2310449-32 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	68	1.0		ug/l	1	BGJ1081	10/26/23	10/26/23	EPA 8260B	
Toluene	3.7	1.0		"	"	"	"	"	"	
Ethylbenzene	29	1.0		"	"	"	"	"	"	
Xylenes (total)	170	2.0		"	"	"	"	"	"	
Naphthalene	5.8	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	94	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	29	1.0		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	11.6	87.2 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	13.4	101 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	13.5	101 %		21-167		"	"	"	"	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1009 - EPA 5030 Soil MS

Blank (BGJ1009-BLK1)

Prepared: 10/25/23 Analyzed: 10/27/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0389		"	0.0400		97.3	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	50-150			

LCS (BGJ1009-BS1)

Prepared: 10/25/23 Analyzed: 10/27/23

Benzene	0.114	0.0020	mg/kg	0.100		114	70-130			
Toluene	0.107	0.0050	"	0.100		107	70-130			
Ethylbenzene	0.116	0.0050	"	0.100		116	70-130			
m,p-Xylene	0.216	0.010	"	0.200		108	70-130			
o-Xylene	0.105	0.0050	"	0.100		105	70-130			
1,2,4-Trimethylbenzene	0.107	0.0050	"	0.100		107	70-130			
1,3,5-Trimethylbenzene	0.110	0.0050	"	0.100		110	70-130			
Naphthalene	0.0876	0.0038	"	0.100		87.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0379		"	0.0400		94.7	50-150			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.2	50-150			

Matrix Spike (BGJ1009-MS1)

Source: 2310449-01

Prepared: 10/25/23 Analyzed: 10/27/23

Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130			
Toluene	0.0953	0.0050	"	0.100	ND	95.3	70-130			
Ethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130			
m,p-Xylene	0.186	0.010	"	0.200	ND	93.0	70-130			
o-Xylene	0.0917	0.0050	"	0.100	ND	91.7	70-130			
1,2,4-Trimethylbenzene	0.0886	0.0050	"	0.100	ND	88.6	70-130			
1,3,5-Trimethylbenzene	0.0953	0.0050	"	0.100	ND	95.3	70-130			
Naphthalene	0.0800	0.0038	"	0.100	ND	80.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400		95.3	50-150			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.5	50-150			

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1009 - EPA 5030 Soil MS

Matrix Spike Dup (BGJ1009-MSD1)

Source: 2310449-01

Prepared: 10/25/23 Analyzed: 10/27/23

Benzene	0.106	0.0020	mg/kg	0.100	ND	106	70-130	1.97	30	
Toluene	0.0994	0.0050	"	0.100	ND	99.4	70-130	4.16	30	
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130	2.39	30	
m,p-Xylene	0.195	0.010	"	0.200	ND	97.4	70-130	4.54	30	
o-Xylene	0.0935	0.0050	"	0.100	ND	93.5	70-130	1.94	30	
1,2,4-Trimethylbenzene	0.0946	0.0050	"	0.100	ND	94.6	70-130	6.58	30	
1,3,5-Trimethylbenzene	0.0966	0.0050	"	0.100	ND	96.6	70-130	1.31	30	
Naphthalene	0.0824	0.0038	"	0.100	ND	82.4	70-130	2.96	30	
Surrogate: 1,2-Dichloroethane-d4	0.0386		"	0.0400		96.4	50-150			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	50-150			

Batch BGJ1010 - EPA 5030 Soil MS

Blank (BGJ1010-BLK1)

Prepared & Analyzed: 10/25/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0426		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.3	50-150			

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1010 - EPA 5030 Soil MS

LCS (BGJ1010-BS1)

Prepared & Analyzed: 10/25/23

Benzene	0.0792	0.0020	mg/kg	0.100		79.2	70-130			
Toluene	0.0733	0.0050	"	0.100		73.3	70-130			
Ethylbenzene	0.0806	0.0050	"	0.100		80.6	70-130			
m,p-Xylene	0.153	0.010	"	0.200		76.5	70-130			
o-Xylene	0.0744	0.0050	"	0.100		74.4	70-130			
1,2,4-Trimethylbenzene	0.0780	0.0050	"	0.100		78.0	70-130			
1,3,5-Trimethylbenzene	0.0773	0.0050	"	0.100		77.3	70-130			
Naphthalene	0.0822	0.0038	"	0.100		82.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0428		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

Matrix Spike (BGJ1010-MS1)

Source: 2310449-21

Prepared & Analyzed: 10/25/23

Benzene	0.0890	0.0020	mg/kg	0.100	ND	89.0	70-130			
Toluene	0.0825	0.0050	"	0.100	ND	82.5	70-130			
Ethylbenzene	0.0852	0.0050	"	0.100	ND	85.2	70-130			
m,p-Xylene	0.163	0.010	"	0.200	ND	81.6	70-130			
o-Xylene	0.0786	0.0050	"	0.100	ND	78.6	70-130			
1,2,4-Trimethylbenzene	0.0805	0.0050	"	0.100	ND	80.5	70-130			
1,3,5-Trimethylbenzene	0.0806	0.0050	"	0.100	ND	80.6	70-130			
Naphthalene	0.0929	0.0038	"	0.100	ND	92.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0509		"	0.0400		127	50-150			
Surrogate: Toluene-d8	0.0499		"	0.0400		125	50-150			
Surrogate: 4-Bromofluorobenzene	0.0463		"	0.0400		116	50-150			

Matrix Spike Dup (BGJ1010-MSD1)

Source: 2310449-21

Prepared: 10/25/23 Analyzed: 10/26/23

Benzene	0.124	0.0020	mg/kg	0.100	ND	124	70-130	32.6	30	QR-02
Toluene	0.117	0.0050	"	0.100	ND	117	70-130	34.9	30	QR-02
Ethylbenzene	0.127	0.0050	"	0.100	ND	127	70-130	39.1	30	QR-02
m,p-Xylene	0.235	0.010	"	0.200	ND	117	70-130	36.0	30	QR-02
o-Xylene	0.115	0.0050	"	0.100	ND	115	70-130	37.3	30	QR-02
1,2,4-Trimethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130	38.8	30	QR-02
1,3,5-Trimethylbenzene	0.120	0.0050	"	0.100	ND	120	70-130	39.6	30	QR-02
Naphthalene	0.113	0.0038	"	0.100	ND	113	70-130	19.4	30	
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1081 - EPA 5030 Water MS

Blank (BGJ1081-BLK1)

Prepared & Analyzed: 10/26/23

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	15.5		"	13.3		116	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.0	21-167			

LCS (BGJ1081-BS1)

Prepared & Analyzed: 10/26/23

Benzene	35.3	1.0	ug/l	33.3		106	51-132			
Toluene	33.7	1.0	"	33.3		101	51-138			
Ethylbenzene	35.4	1.0	"	33.3		106	58-146			
m,p-Xylene	69.1	2.0	"	66.7		104	57-144			
o-Xylene	34.1	1.0	"	33.3		102	53-146			
Naphthalene	28.3	1.0	"	33.3		84.8	70-130			
1,2,4-Trimethylbenzene	34.6	1.0	"	33.3		104	70-130			
1,3,5-Trimethylbenzene	34.5	1.0	"	33.3		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.3		96.5	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.9	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	21-167			

Matrix Spike (BGJ1081-MS1)

Source: 2310471-01

Prepared & Analyzed: 10/26/23

Benzene	36.8	1.0	ug/l	33.3	ND	110	34-141			
Toluene	34.2	1.0	"	33.3	ND	103	27-151			
Ethylbenzene	35.4	1.0	"	33.3	ND	106	29-160			
m,p-Xylene	72.6	2.0	"	66.7	ND	109	20-166			
o-Xylene	34.4	1.0	"	33.3	ND	103	33-159			
Naphthalene	35.8	1.0	"	33.3	ND	107	70-130			
1,2,4-Trimethylbenzene	34.8	1.0	"	33.3	ND	104	70-130			
1,3,5-Trimethylbenzene	35.4	1.0	"	33.3	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		99.3	20-170			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.4	21-167			

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1081 - EPA 5030 Water MS

Matrix Spike Dup (BGJ1081-MSD1)		Source: 2310471-01			Prepared & Analyzed: 10/26/23					
Benzene	36.0	1.0	ug/l	33.3	ND	108	34-141	2.12	30	
Toluene	33.1	1.0	"	33.3	ND	99.3	27-151	3.27	30	
Ethylbenzene	34.6	1.0	"	33.3	ND	104	29-160	2.03	30	
m,p-Xylene	70.3	2.0	"	66.7	ND	105	20-166	3.19	30	
o-Xylene	33.6	1.0	"	33.3	ND	101	33-159	2.23	30	
Naphthalene	35.0	1.0	"	33.3	ND	105	70-130	2.40	30	
1,2,4-Trimethylbenzene	34.2	1.0	"	33.3	ND	103	70-130	1.62	30	
1,3,5-Trimethylbenzene	34.2	1.0	"	33.3	ND	103	70-130	3.56	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	13.5		"	13.3		101	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		99.1	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.7	21-167			

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1012 - EPA 3550A

Blank (BGJ1012-BLK1)

Prepared: 10/25/23 Analyzed: 10/27/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	9.72		"	12.5		77.8	30-150			

LCS (BGJ1012-BS1)

Prepared: 10/25/23 Analyzed: 10/27/23

C10-C28 (DRO)	437	50	mg/kg	500		87.3	70-130			
Surrogate: o-Terphenyl	8.64		"	12.5		69.1	30-150			

Matrix Spike (BGJ1012-MS1)

Source: 2310449-21

Prepared: 10/25/23 Analyzed: 10/27/23

C10-C28 (DRO)	483	50	mg/kg	500	15.5	93.5	70-130			
Surrogate: o-Terphenyl	7.88		"	12.5		63.0	30-150			

Matrix Spike Dup (BGJ1012-MSD1)

Source: 2310449-21

Prepared: 10/25/23 Analyzed: 10/27/23

C10-C28 (DRO)	456	50	mg/kg	500	15.5	88.2	70-130	5.62	20	
Surrogate: o-Terphenyl	8.18		"	12.5		65.4	30-150			

Batch BGJ1013 - EPA 3550A

Blank (BGJ1013-BLK1)

Prepared: 10/25/23 Analyzed: 10/27/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	9.41		"	12.5		75.3	30-150			

LCS (BGJ1013-BS1)

Prepared: 10/25/23 Analyzed: 10/27/23

C10-C28 (DRO)	394	50	mg/kg	500		78.8	70-130			
Surrogate: o-Terphenyl	8.59		"	12.5		68.7	30-150			

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1013 - EPA 3550A

Matrix Spike (BGJ1013-MS1)

Source: 2310449-01

Prepared: 10/25/23 Analyzed: 10/27/23

C10-C28 (DRO)	401	50	mg/kg	500	14.4	77.2	70-130			
Surrogate: o-Terphenyl	9.00		"	12.5		72.0	30-150			

Matrix Spike Dup (BGJ1013-MSD1)

Source: 2310449-01

Prepared: 10/25/23 Analyzed: 10/27/23

C10-C28 (DRO)	411	50	mg/kg	500	14.4	79.4	70-130	2.61	20	
Surrogate: o-Terphenyl	8.94		"	12.5		71.5	30-150			

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BGJ0970 - EPA 5030 Soil MS

Blank (BGJ0970-BLK1)

Prepared & Analyzed: 10/25/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0286		"	0.0333		85.7		40-150			
Surrogate: Fluoranthene-d10	0.0329		"	0.0333		98.8		40-150			

LCS (BGJ0970-BS1)

Prepared & Analyzed: 10/25/23

Acenaphthene	0.0318	0.00500	mg/kg	0.0333		95.5		31-137			
Anthracene	0.0320	0.00500	"	0.0333		95.9		30-120			
Benzo (a) anthracene	0.0305	0.00500	"	0.0333		91.6		30-120			
Benzo (a) pyrene	0.0274	0.00500	"	0.0333		82.3		30-120			
Benzo (b) fluoranthene	0.0319	0.00500	"	0.0333		95.6		30-120			
Benzo (k) fluoranthene	0.0336	0.00500	"	0.0333		101		30-120			
Chrysene	0.0335	0.00500	"	0.0333		101		30-120			
Dibenz (a,h) anthracene	0.0208	0.00500	"	0.0333		62.3		30-120			
Fluoranthene	0.0326	0.00500	"	0.0333		97.7		30-120			
Fluorene	0.0338	0.00500	"	0.0333		101		30-120			
Indeno (1,2,3-cd) pyrene	0.0287	0.00500	"	0.0333		86.2		30-120			
Pyrene	0.0360	0.00500	"	0.0333		108		35-142			
1-Methylnaphthalene	0.0298	0.00500	"	0.0333		89.4		35-142			
2-Methylnaphthalene	0.0339	0.00500	"	0.0333		102		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0235		"	0.0333		70.4		40-150			
Surrogate: Fluoranthene-d10	0.0324		"	0.0333		97.1		40-150			

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BGJ0970 - EPA 5030 Soil MS

Matrix Spike (BGJ0970-MS1)

Source: 2310449-01

Prepared & Analyzed: 10/25/23

Acenaphthene	0.0232	0.00500	mg/kg	0.0333	ND	69.5	31-137		
Anthracene	0.0228	0.00500	"	0.0333	ND	68.5	30-120		
Benzo (a) anthracene	0.0242	0.00500	"	0.0333	ND	72.5	30-120		
Benzo (a) pyrene	0.0207	0.00500	"	0.0333	ND	62.1	30-120		
Benzo (b) fluoranthene	0.0222	0.00500	"	0.0333	ND	66.5	30-120		
Benzo (k) fluoranthene	0.0227	0.00500	"	0.0333	ND	68.2	30-120		
Chrysene	0.0238	0.00500	"	0.0333	ND	71.4	30-120		
Dibenz (a,h) anthracene	0.0155	0.00500	"	0.0333	ND	46.4	30-120		
Fluoranthene	0.0234	0.00500	"	0.0333	ND	70.3	30-120		
Fluorene	0.0265	0.00500	"	0.0333	ND	79.5	30-120		
Indeno (1,2,3-cd) pyrene	0.0225	0.00500	"	0.0333	ND	67.6	30-120		
Pyrene	0.0256	0.00500	"	0.0333	ND	76.7	35-142		
1-Methylnaphthalene	0.0266	0.00500	"	0.0333	ND	79.7	15-130		
2-Methylnaphthalene	0.0288	0.00500	"	0.0333	ND	86.4	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0197		"	0.0333		59.1	40-150		
Surrogate: Fluoranthene-d10	0.0240		"	0.0333		72.1	40-150		

Matrix Spike Dup (BGJ0970-MSD1)

Source: 2310449-01

Prepared & Analyzed: 10/25/23

Acenaphthene	0.0220	0.00500	mg/kg	0.0333	ND	66.1	31-137	5.01	30
Anthracene	0.0232	0.00500	"	0.0333	ND	69.7	30-120	1.82	30
Benzo (a) anthracene	0.0241	0.00500	"	0.0333	ND	72.3	30-120	0.296	30
Benzo (a) pyrene	0.0208	0.00500	"	0.0333	ND	62.5	30-120	0.632	30
Benzo (b) fluoranthene	0.0220	0.00500	"	0.0333	ND	65.9	30-120	0.820	30
Benzo (k) fluoranthene	0.0219	0.00500	"	0.0333	ND	65.8	30-120	3.51	30
Chrysene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	3.24	30
Dibenz (a,h) anthracene	0.0160	0.00500	"	0.0333	ND	48.1	30-120	3.55	30
Fluoranthene	0.0236	0.00500	"	0.0333	ND	70.7	30-120	0.661	30
Fluorene	0.0267	0.00500	"	0.0333	ND	80.0	30-120	0.567	30
Indeno (1,2,3-cd) pyrene	0.0230	0.00500	"	0.0333	ND	69.1	30-120	2.18	30
Pyrene	0.0249	0.00500	"	0.0333	ND	74.6	35-142	2.80	30
1-Methylnaphthalene	0.0237	0.00500	"	0.0333	ND	71.1	15-130	11.5	50
2-Methylnaphthalene	0.0254	0.00500	"	0.0333	ND	76.2	15-130	12.6	50
Surrogate: 2-Methylnaphthalene-d10	0.0186		"	0.0333		55.9	40-150		
Surrogate: Fluoranthene-d10	0.0240		"	0.0333		72.0	40-150		

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ0972 - EPA 5030 Soil MS

Blank (BGJ0972-BLK1)

Prepared: 10/25/23 Analyzed: 10/26/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0300		"	0.0333		90.1	40-150			
Surrogate: Fluoranthene-d10	0.0330		"	0.0333		99.1	40-150			

LCS (BGJ0972-BS1)

Prepared: 10/25/23 Analyzed: 10/26/23

Acenaphthene	0.0277	0.00500	mg/kg	0.0333		83.2	31-137			
Anthracene	0.0317	0.00500	"	0.0333		95.2	30-120			
Benzo (a) anthracene	0.0357	0.00500	"	0.0333		107	30-120			
Benzo (a) pyrene	0.0303	0.00500	"	0.0333		91.0	30-120			
Benzo (b) fluoranthene	0.0302	0.00500	"	0.0333		90.5	30-120			
Benzo (k) fluoranthene	0.0266	0.00500	"	0.0333		79.7	30-120			
Chrysene	0.0302	0.00500	"	0.0333		90.5	30-120			
Dibenz (a,h) anthracene	0.0288	0.00500	"	0.0333		86.3	30-120			
Fluoranthene	0.0321	0.00500	"	0.0333		96.4	30-120			
Fluorene	0.0282	0.00500	"	0.0333		84.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0228	0.00500	"	0.0333		68.4	30-120			
Pyrene	0.0294	0.00500	"	0.0333		88.1	35-142			
1-Methylnaphthalene	0.0310	0.00500	"	0.0333		92.9	35-142			
2-Methylnaphthalene	0.0300	0.00500	"	0.0333		89.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0308		"	0.0333		92.3	40-150			
Surrogate: Fluoranthene-d10	0.0318		"	0.0333		95.5	40-150			

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ0972 - EPA 5030 Soil MS

Matrix Spike (BGJ0972-MS1)

Source: 2310449-21

Prepared: 10/25/23 Analyzed: 10/26/23

Acenaphthene	0.0145	0.00500	mg/kg	0.0333	ND	43.6	31-137				
Anthracene	0.0176	0.00500	"	0.0333	ND	52.9	30-120				
Benzo (a) anthracene	0.0202	0.00500	"	0.0333	ND	60.5	30-120				
Benzo (a) pyrene	0.0154	0.00500	"	0.0333	ND	46.2	30-120				
Benzo (b) fluoranthene	0.0153	0.00500	"	0.0333	ND	45.8	30-120				
Benzo (k) fluoranthene	0.0137	0.00500	"	0.0333	ND	41.0	30-120				
Chrysene	0.0180	0.00500	"	0.0333	ND	54.0	30-120				
Dibenz (a,h) anthracene	0.0145	0.00500	"	0.0333	ND	43.6	30-120				
Fluoranthene	0.0172	0.00500	"	0.0333	ND	51.5	30-120				
Fluorene	0.0141	0.00500	"	0.0333	ND	42.4	30-120				
Indeno (1,2,3-cd) pyrene	0.0145	0.00500	"	0.0333	ND	43.5	30-120				
Pyrene	0.0164	0.00500	"	0.0333	ND	49.2	35-142				
1-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.4	15-130				
2-Methylnaphthalene	0.0186	0.00500	"	0.0333	ND	55.8	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0200		"	0.0333		59.9	40-150				
Surrogate: Fluoranthene-d10	0.0176		"	0.0333		52.7	40-150				

Matrix Spike Dup (BGJ0972-MSD1)

Source: 2310449-21

Prepared: 10/25/23 Analyzed: 10/26/23

Acenaphthene	0.0147	0.00500	mg/kg	0.0333	ND	44.1	31-137	1.05	30		
Anthracene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	9.12	30		
Benzo (a) anthracene	0.0222	0.00500	"	0.0333	ND	66.6	30-120	9.57	30		
Benzo (a) pyrene	0.0184	0.00500	"	0.0333	ND	55.2	30-120	17.8	30		
Benzo (b) fluoranthene	0.0187	0.00500	"	0.0333	ND	56.1	30-120	20.3	30		
Benzo (k) fluoranthene	0.0172	0.00500	"	0.0333	ND	51.5	30-120	22.7	30		
Chrysene	0.0196	0.00500	"	0.0333	ND	58.7	30-120	8.35	30		
Dibenz (a,h) anthracene	0.0177	0.00500	"	0.0333	ND	53.2	30-120	19.8	30		
Fluoranthene	0.0197	0.00500	"	0.0333	ND	59.0	30-120	13.6	30		
Fluorene	0.0173	0.00500	"	0.0333	ND	51.8	30-120	19.9	30		
Indeno (1,2,3-cd) pyrene	0.0188	0.00500	"	0.0333	ND	56.3	30-120	25.7	30		
Pyrene	0.0185	0.00500	"	0.0333	ND	55.4	35-142	11.9	30		
1-Methylnaphthalene	0.0189	0.00500	"	0.0333	ND	56.8	15-130	4.47	50		
2-Methylnaphthalene	0.0183	0.00500	"	0.0333	ND	54.9	15-130	1.66	50		
Surrogate: 2-Methylnaphthalene-d10	0.0202		"	0.0333		60.7	40-150				
Surrogate: Fluoranthene-d10	0.0198		"	0.0333		59.4	40-150				

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGK0028 - EPA 3050B

Blank (BGK0028-BLK1)

Prepared: 11/01/23 Analyzed: 11/07/23

Boron ND 2.00 mg/L

LCS (BGK0028-BS1)

Prepared: 11/01/23 Analyzed: 11/07/23

Boron 5.74 2.00 mg/L 5.00 115 80-120

Duplicate (BGK0028-DUP1)

Source: 2310449-01

Prepared: 11/01/23 Analyzed: 11/07/23

Boron 0.115 2.00 mg/L 0.129 11.3 20

Matrix Spike (BGK0028-MS1)

Source: 2310449-01

Prepared: 11/01/23 Analyzed: 11/07/23

Boron 5.47 2.00 mg/L 5.00 0.129 107 75-125

Matrix Spike Dup (BGK0028-MSD1)

Source: 2310449-01

Prepared: 11/01/23 Analyzed: 11/07/23

Boron 6.15 2.00 mg/L 5.00 0.129 121 75-125 11.8 25

Batch BGK0029 - EPA 3050B

Blank (BGK0029-BLK1)

Prepared: 11/01/23 Analyzed: 11/04/23

Boron ND 2.00 mg/L

LCS (BGK0029-BS1)

Prepared: 11/01/23 Analyzed: 11/04/23

Boron 4.74 2.00 mg/L 5.00 94.7 80-120

Duplicate (BGK0029-DUP1)

Source: 2310449-09

Prepared: 11/01/23 Analyzed: 11/04/23

Boron 0.0971 2.00 mg/L 0.107 9.99 20

Matrix Spike (BGK0029-MS1)

Source: 2310449-09

Prepared: 11/01/23 Analyzed: 11/04/23

Boron 4.74 2.00 mg/L 5.00 0.107 92.6 75-125

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Fremont Environmental	Project: Noble - Volkens Coleman T4N-R64W-S23 L01	
PO Box 1289	Project Number: UWRWE-A2617-ABN	Reported:
Wellington CO, 80549	Project Manager: Paul Henchan	11/09/23 08:30

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

Summit Scientific

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

Batch BGK0029 - EPA 3050B

Matrix Spike Dup (BGK0029-MSD1)	Source: 2310449-09			Prepared: 11/01/23 Analyzed: 11/04/23						
Boron	4.74	2.00	mg/L	5.00	0.107	92.7	75-125	0.0962	25	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1243 - EPA 3050B

Blank (BGJ1243-BLK1)

Prepared: 10/31/23 Analyzed: 11/02/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGJ1243-BS1)

Prepared: 10/31/23 Analyzed: 11/02/23

Arsenic	37.2	0.200	mg/kg wet	40.0	93.0	80-120
Barium	32.2	0.400	"	40.0	80.6	80-120
Cadmium	1.98	0.200	"	2.00	98.8	80-120
Copper	40.9	0.400	"	40.0	102	80-120
Lead	16.3	0.200	"	20.0	81.3	80-120
Nickel	40.4	0.400	"	40.0	101	80-120
Silver	1.99	0.0200	"	2.00	99.6	80-120
Zinc	39.2	0.400	"	40.0	97.9	80-120
Selenium	3.97	0.260	"	4.00	99.3	80-120


Duplicate (BGJ1243-DUP1)

Source: 2310449-01

Prepared: 10/31/23 Analyzed: 11/02/23

Arsenic	1.14	0.200	mg/kg dry	0.901	23.2	20	QR-01
Barium	28.8	0.400	"	33.9	16.5	20	
Cadmium	0.0570	0.200	"	0.0604	5.80	20	
Copper	2.49	0.400	"	2.05	19.4	20	
Lead	2.06	0.200	"	2.21	7.08	20	
Nickel	1.76	0.400	"	1.46	18.9	20	
Silver	0.00638	0.0200	"	0.00680	6.45	20	
Zinc	5.72	0.400	"	4.70	19.5	20	
Selenium	ND	0.260	"	ND		20	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1243 - EPA 3050B

Matrix Spike (BGJ1243-MS1)

Source: 2310449-01

Prepared: 10/31/23 Analyzed: 11/02/23

Arsenic	18.8	0.200	mg/kg dry	42.5	0.901	42.1	75-125			QM-07
Barium	66.7	0.400	"	42.5	33.9	77.1	75-125			
Cadmium	1.87	0.200	"	2.13	0.0604	85.0	75-125			
Copper	21.5	0.400	"	42.5	2.05	45.9	75-125			QM-07
Lead	20.2	0.200	"	21.3	2.21	84.7	75-125			
Nickel	20.6	0.400	"	42.5	1.46	45.1	75-125			QM-07
Silver	1.78	0.0200	"	2.13	0.00680	83.6	75-125			
Zinc	23.2	0.400	"	42.5	4.70	43.6	75-125			QM-07
Selenium	4.75	0.260	"	4.25	ND	112	75-125			

Matrix Spike Dup (BGJ1243-MSD1)

Source: 2310449-01

Prepared: 10/31/23 Analyzed: 11/02/23

Arsenic	18.7	0.200	mg/kg dry	42.5	0.901	41.9	75-125	0.463	25	QM-07
Barium	56.6	0.400	"	42.5	33.9	53.3	75-125	16.4	25	QM-07
Cadmium	1.62	0.200	"	2.13	0.0604	73.5	75-125	14.0	25	QM-07
Copper	21.0	0.400	"	42.5	2.05	44.6	75-125	2.58	25	QM-07
Lead	17.3	0.200	"	21.3	2.21	71.2	75-125	15.4	25	QM-07
Nickel	19.9	0.400	"	42.5	1.46	43.4	75-125	3.43	25	QM-07
Silver	1.58	0.0200	"	2.13	0.00680	74.2	75-125	11.8	25	QM-07
Zinc	22.5	0.400	"	42.5	4.70	41.9	75-125	3.10	25	QM-07
Selenium	4.16	0.260	"	4.25	ND	97.9	75-125	13.2	25	


Batch BGJ1244 - EPA 3050B

Blank (BGJ1244-BLK1)

Prepared: 10/31/23 Analyzed: 11/02/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"
Selenium	ND	0.260	"

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1244 - EPA 3050B

LCS (BGJ1244-BS1)

Prepared: 10/31/23 Analyzed: 11/02/23

Arsenic	34.6	0.200	mg/kg wet	40.0		86.4	80-120
Barium	38.1	0.400	"	40.0		95.3	80-120
Cadmium	1.84	0.200	"	2.00		92.1	80-120
Copper	39.3	0.400	"	40.0		98.2	80-120
Lead	18.5	0.200	"	20.0		92.7	80-120
Nickel	39.4	0.400	"	40.0		98.4	80-120
Silver	1.79	0.0200	"	2.00		89.7	80-120
Zinc	39.7	0.400	"	40.0		99.2	80-120
Selenium	4.64	0.260	"	4.00		116	80-120

Duplicate (BGJ1244-DUP1)

Source: 2310449-21

Prepared: 10/31/23 Analyzed: 11/02/23

Arsenic	3.29	0.200	mg/kg dry		2.44		29.5	20	QR-04
Barium	151	0.400	"		106		34.8	20	QR-04
Cadmium	0.241	0.200	"		0.172		33.2	20	QR-01
Copper	7.45	0.400	"		6.41		14.9	20	
Lead	10.0	0.200	"		7.58		28.0	20	QR-04
Nickel	6.33	0.400	"		5.03		23.0	20	QR-04
Silver	0.0418	0.0200	"		0.0324		25.4	20	QR-01
Zinc	25.9	0.400	"		20.7		22.2	20	QR-04
Selenium	ND	0.260	"		ND			20	

Matrix Spike (BGJ1244-MS1)

Source: 2310449-21

Prepared: 10/31/23 Analyzed: 11/02/23

Arsenic	39.5	0.200	mg/kg dry	52.3	2.44	70.9	75-125		QM-07
Barium	156	0.400	"	52.3	106	94.7	75-125		
Cadmium	2.19	0.200	"	2.61	0.172	77.0	75-125		
Copper	33.7	0.400	"	52.3	6.41	52.3	75-125		QM-07
Lead	28.4	0.200	"	26.1	7.58	79.6	75-125		
Nickel	32.6	0.400	"	52.3	5.03	52.7	75-125		QM-07
Silver	1.96	0.0200	"	2.61	0.0324	73.6	75-125		QM-07
Zinc	51.5	0.400	"	52.3	20.7	58.9	75-125		QM-07
Selenium	4.35	0.260	"	5.23	ND	83.2	75-125		

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1244 - EPA 3050B

Matrix Spike Dup (BGJ1244-MSD1)		Source: 2310449-21			Prepared: 10/31/23 Analyzed: 11/02/23						
Arsenic	39.5	0.200	mg/kg dry	52.3	2.44	70.8	75-125	0.0781	25		QM-07
Barium	156	0.400	"	52.3	106	95.4	75-125	0.238	25		
Cadmium	2.21	0.200	"	2.61	0.172	77.8	75-125	0.952	25		
Copper	33.0	0.400	"	52.3	6.41	50.8	75-125	2.35	25		QM-07
Lead	28.6	0.200	"	26.1	7.58	80.2	75-125	0.582	25		
Nickel	31.7	0.400	"	52.3	5.03	50.9	75-125	2.89	25		QM-07
Silver	1.95	0.0200	"	2.61	0.0324	73.4	75-125	0.214	25		QM-07
Zinc	50.5	0.400	"	52.3	20.7	56.9	75-125	2.06	25		QM-07
Selenium	4.14	0.260	"	5.23	ND	79.2	75-125	4.96	25		

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1089 - 3060A Mod

Blank (BGJ1089-BLK1)

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGJ1089-BS1)

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent 26.6 0.30 mg/kg wet 25.0 107 80-120

Duplicate (BGJ1089-DUP1)

Source: 2310112-01

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGJ1089-MS1)

Source: 2310112-01

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent 26.3 0.30 mg/kg dry 29.6 ND 89.0 75-125

Matrix Spike Dup (BGJ1089-MSD1)

Source: 2310112-01

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent 26.3 0.30 mg/kg dry 29.6 ND 88.8 75-125 0.225 20

Batch BGJ1090 - 3060A Mod

Blank (BGJ1090-BLK1)

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGJ1090-BS1)

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent 24.8 0.30 mg/kg wet 25.0 99.4 80-120

Duplicate (BGJ1090-DUP1)

Source: 2310449-09

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGJ1090-MS1)

Source: 2310449-09

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent 32.3 0.30 mg/kg dry 29.5 ND 110 75-125

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Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Volkens Coleman T4N-R64W-S23 L01 Project Number: UWRWE-A2617-ABN Project Manager: Paul Henchan	Reported: 11/09/23 08:30
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Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGJ1090 - 3060A Mod

Matrix Spike Dup (BGJ1090-MSD1)	Source: 2310449-09			Prepared & Analyzed: 10/26/23					
Chromium, Hexavalent	32.2	0.30	mg/kg dry	29.5	ND	109	75-125	0.365	20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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

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

Batch BGJ1086 - General Preparation

Blank (BGJ1086-BLK1)

Prepared: 10/26/23 Analyzed: 10/31/23

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

LCS (BGJ1086-BS1)

Prepared: 10/26/23 Analyzed: 10/31/23

Calcium	5.71	0.0500	mg/L wet	5.00	114	70-130
Magnesium	5.50	0.0500	"	5.00	110	70-130
Sodium	5.50	0.0500	"	5.00	110	70-130

Batch BGJ1094 - General Preparation

Blank (BGJ1094-BLK1)

Prepared: 10/26/23 Analyzed: 11/02/23

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

LCS (BGJ1094-BS1)

Prepared: 10/26/23 Analyzed: 11/02/23

Calcium	4.71	0.0500	mg/L wet	5.00	94.1	70-130
Magnesium	5.45	0.0500	"	5.00	109	70-130
Sodium	5.64	0.0500	"	5.00	113	70-130

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01

Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1256 - General Preparation

Duplicate (BGJ1256-DUP1) **Source: 2309584-05** Prepared: 10/31/23 Analyzed: 11/01/23

% Solids	78.3	%		79.5		1.41	20
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Batch BGJ1266 - General Preparation

Duplicate (BGJ1266-DUP1) **Source: 2310449-13** Prepared: 10/31/23 Analyzed: 11/01/23

% Solids	81.0	%		82.1		1.37	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
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Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

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 BGJ1105 - General Preparation

Blank (BGJ1105-BLK1)

Prepared: 10/27/23 Analyzed: 10/30/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGJ1105-BS1)

Prepared: 10/27/23 Analyzed: 10/30/23

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 100 95-105

Duplicate (BGJ1105-DUP1)

Source: 2310140-03

Prepared: 10/27/23 Analyzed: 10/30/23

Specific Conductance (EC) 0.161 0.0100 mmhos/cm 0.161 0.00 20

Batch BGJ1135 - General Preparation

Blank (BGJ1135-BLK1)

Prepared: 10/27/23 Analyzed: 10/30/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGJ1135-BS1)

Prepared: 10/27/23 Analyzed: 10/30/23

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 100 95-105

Duplicate (BGJ1135-DUP1)

Source: 2310449-01

Prepared: 10/27/23 Analyzed: 10/30/23

Specific Conductance (EC) 0.113 0.0100 mmhos/cm 0.115 1.58 20

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BGJ1103 - General Preparation

LCS (BGJ1103-BS1)

Prepared: 10/27/23 Analyzed: 10/30/23

pH	9.05		pH Units	9.18		98.6	95-105		
----	------	--	----------	------	--	------	--------	--	--

Duplicate (BGJ1103-DUP1)

Source: 2310140-04

Prepared: 10/27/23 Analyzed: 10/30/23

pH	8.51		pH Units		8.51			0.00	20
----	------	--	----------	--	------	--	--	------	----

Batch BGJ1133 - General Preparation

LCS (BGJ1133-BS1)

Prepared: 10/27/23 Analyzed: 10/30/23

pH	9.05		pH Units	9.18		98.6	95-105		
----	------	--	----------	------	--	------	--------	--	--

Duplicate (BGJ1133-DUP1)

Source: 2310449-01

Prepared: 10/27/23 Analyzed: 10/30/23

pH	8.61		pH Units		8.61			0.00	20
----	------	--	----------	--	------	--	--	------	----

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01

Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/09/23 08:30

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 06, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman

Work Order #2310459

Enclosed are the results of analyses for samples received by Summit Scientific on 10/24/23 16:02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG01@6.0"	2310459-01	Soil	10/24/23 00:00	10/24/23 16:02
BKG01@4.0'	2310459-02	Soil	10/24/23 00:00	10/24/23 16:02
BKG01@6.5'	2310459-03	Soil	10/24/23 00:00	10/24/23 16:02
BKG02@6.0"	2310459-04	Soil	10/24/23 00:00	10/24/23 16:02
BKG02@4.0'	2310459-05	Soil	10/24/23 00:00	10/24/23 16:02
BKG02@6.5'	2310459-06	Soil	10/24/23 00:00	10/24/23 16:02
BKG03@6.0"	2310459-07	Soil	10/24/23 00:00	10/24/23 16:02
BKG03@4.0'	2310459-08	Soil	10/24/23 00:00	10/24/23 16:02
BKG03@6.5'	2310459-09	Soil	10/24/23 00:00	10/24/23 16:02
BKG04@6.0"	2310459-10	Soil	10/24/23 00:00	10/24/23 16:02
BKG04@4.0'	2310459-11	Soil	10/24/23 00:00	10/24/23 16:02
BKG04@6.5'	2310459-12	Soil	10/24/23 00:00	10/24/23 16:02
BKG05@6.0"	2310459-13	Soil	10/24/23 00:00	10/24/23 16:02
BKG05@4.0'	2310459-14	Soil	10/24/23 00:00	10/24/23 16:02
BKG05@6.5'	2310459-15	Soil	10/24/23 00:00	10/24/23 16:02

Summit Scientific

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

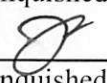
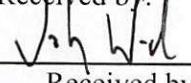
SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2310459	

Client: Fremont Env		Send Data To:		Send Invoice To:	
Address:		Project Manager: Paul Henahan		Company: Noble	
City/State/Zip:		E-Mail: Paulh@Fremontenv.com		Project Name/Location: Coleman C 23-29D	
Phone:		Jeff@Fremontenv.com Ethan@Fremontenv.com		AFE#:	
Sampler Name: JG		Project Name: Volkens Coleman T4N-R64U-523 L01 / Coleman C 23-29D / Coleman C 23-21D		PO/Billing Codes: UWRWE - A2617-ABN	
		Project Number:		Contact:	

		Preservative				Matrix			Analysis Requested						Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	EC, pH, SAR, Boron	Metals (915)		
1	BK601@6.0"	10/24/23		1			X			X			X	X		
2	BK601@4.0'															
3	BK601@6.5'															
4	BK602@6.0"															
5	BK602@4.0'															
6	BK602@6.5'															
7	BK603@6.0"															
8	BK603@4.0'															
9	BK603@6.5'															
10	BK604@6.0"															
11	BK604@4.0'															
12	BK604@6.5'															
13	BK605@6.0"															
14	BK605@4.0'															
15	BK605@6.5'															

Relinquished by: 	Date/Time: 10/24/23 1602	Received by: 	Date/Time: 10/24/23 16:02	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	X Field Turb.	
Temperature Upon Receipt: 21.3		Corrected Temperature	IR gun #: 2	HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2310459Client: Noble Fremont Client Project ID: Volkens Coleman T4N-R644-S23 w/oShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____

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

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 21.3 Thermometer # 2

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

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

John W. H.
Custodian Printed Name

10/24/23 16:02
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG01@6.0"
2310459-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.06	0.200		mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	117	0.400		"	"	"	"	"	"	
Cadmium	0.307	0.200		"	"	"	"	"	"	
Copper	3.58	0.400		"	"	"	"	"	"	
Lead	9.61	0.200		"	"	"	"	"	"	
Nickel	2.76	0.400		"	"	"	"	"	"	
Silver	0.0554	0.0200		"	"	"	"	"	"	
Zinc	13.6	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	21.3	0.0500		mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	5.23	0.0500		"	"	"	"	"	"	
Sodium	16.3	0.0500		"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG01@6.0"
2310459-01 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.821	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.7		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.196	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.81		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG01@4.0'
2310459-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.946	0.200	mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	116	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.61	0.400	"	"	"	"	"	"	
Lead	5.43	0.200	"	"	"	"	"	"	
Nickel	2.47	0.400	"	"	"	"	"	"	
Silver	0.0235	0.0200	"	"	"	"	"	"	
Zinc	8.81	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	80.4	0.0500	mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	32.5	0.0500	"	"	"	"	"	"	
Sodium	228	0.0500	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG01@4.0'
2310459-02 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.42	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.9		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.58	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.89		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG01@6.5'
2310459-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	0.843	0.200		mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	81.2	0.400		"	"	"	"	"	"	
Cadmium	ND	0.200		"	"	"	"	"	"	
Copper	2.25	0.400		"	"	"	"	"	"	
Lead	5.17	0.200		"	"	"	"	"	"	
Nickel	2.38	0.400		"	"	"	"	"	"	
Silver	0.0223	0.0200		"	"	"	"	"	"	
Zinc	8.56	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	50.1	0.0500		mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	18.6	0.0500		"	"	"	"	"	"	
Sodium	123	0.0500		"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG01@6.5'
2310459-03 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.77	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.2		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.853	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.85		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG02@6.0"
2310459-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	1.03	0.200	mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	127	0.400	"	"	"	"	"	"	
Cadmium	0.262	0.200	"	"	"	"	"	"	
Copper	3.17	0.400	"	"	"	"	"	"	
Lead	9.29	0.200	"	"	"	"	"	"	
Nickel	2.60	0.400	"	"	"	"	"	"	
Silver	0.0472	0.0200	"	"	"	"	"	"	
Zinc	11.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	20.8	0.0500	mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	4.94	0.0500	"	"	"	"	"	"	
Sodium	85.5	0.0500	"	"	"	"	"	"	

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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG02@6.0"
2310459-04 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.38	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.2		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.493	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.26		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG02@4.0'
2310459-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	0.766	0.200		mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	136	0.400		"	"	"	"	"	"	
Cadmium	ND	0.200		"	"	"	"	"	"	
Copper	1.86	0.400		"	"	"	"	"	"	
Lead	3.85	0.200		"	"	"	"	"	"	
Nickel	1.70	0.400		"	"	"	"	"	"	
Silver	ND	0.0200		"	"	"	"	"	"	
Zinc	7.12	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	92.0	0.0500		mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	66.0	0.0500		"	"	"	"	"	"	
Sodium	506	0.0500		"	"	"	"	"	"	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG02@4.0'
2310459-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.83	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.4		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.13	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.87		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

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PO Box 1289
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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG02@6.5'
2310459-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.653	0.200	mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	21.5	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.39	0.400	"	"	"	"	"	"	
Lead	2.60	0.200	"	"	"	"	"	"	
Nickel	1.14	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	5.20	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	67.4	0.0500	mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	32.5	0.0500	"	"	"	"	"	"	
Sodium	231	0.0500	"	"	"	"	"	"	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG02@6.5'
2310459-06 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.78	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.0		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.54	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.75		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG03@6.0"
2310459-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.00	0.200		mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	114	0.400		"	"	"	"	"	"	
Cadmium	0.287	0.200		"	"	"	"	"	"	
Copper	3.12	0.400		"	"	"	"	"	"	
Lead	9.14	0.200		"	"	"	"	"	"	
Nickel	2.44	0.400		"	"	"	"	"	"	
Silver	0.0387	0.0200		"	"	"	"	"	"	
Zinc	12.5	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	25.8	0.0500		mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	6.14	0.0500		"	"	"	"	"	"	
Sodium	135	0.0500		"	"	"	"	"	"	

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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG03@6.0"
2310459-07 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.20	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.9		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.749	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.25		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG03@4.0'
2310459-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.840	0.200	mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	76.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.79	0.400	"	"	"	"	"	"	
Lead	6.81	0.200	"	"	"	"	"	"	
Nickel	2.44	0.400	"	"	"	"	"	"	
Silver	0.0231	0.0200	"	"	"	"	"	"	
Zinc	10.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	35.9	0.0500	mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	16.0	0.0500	"	"	"	"	"	"	
Sodium	173	0.0500	"	"	"	"	"	"	

Summit Scientific

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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG03@4.0'
2310459-08 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.04	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.8		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.987	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.05		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

Summit Scientific

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Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG03@6.5'
2310459-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.802	0.200	mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	160	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.63	0.400	"	"	"	"	"	"	
Lead	6.07	0.200	"	"	"	"	"	"	
Nickel	2.59	0.400	"	"	"	"	"	"	
Silver	0.0248	0.0200	"	"	"	"	"	"	
Zinc	9.42	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	20.7	0.0500	mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	7.96	0.0500	"	"	"	"	"	"	
Sodium	62.0	0.0500	"	"	"	"	"	"	

Summit Scientific

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG03@6.5'
2310459-09 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.94	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.4		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.362	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG04@6.0"
2310459-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	1.05	0.200	mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	119	0.400	"	"	"	"	"	"	
Cadmium	0.292	0.200	"	"	"	"	"	"	
Copper	4.37	0.400	"	"	"	"	"	"	
Lead	9.78	0.200	"	"	"	"	"	"	
Nickel	2.80	0.400	"	"	"	"	"	"	
Silver	0.0500	0.0200	"	"	"	"	"	"	
Zinc	13.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	19.9	0.0500	mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	5.68	0.0500	"	"	"	"	"	"	
Sodium	70.6	0.0500	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG04@6.0"
2310459-10 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.59	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.4		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.424	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.44		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG04@4.0'
2310459-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.979	0.200	mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	116	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.23	0.400	"	"	"	"	"	"	
Lead	5.81	0.200	"	"	"	"	"	"	
Nickel	2.46	0.400	"	"	"	"	"	"	
Silver	0.0283	0.0200	"	"	"	"	"	"	
Zinc	8.61	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	44.9	0.0500	mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	24.3	0.0500	"	"	"	"	"	"	
Sodium	308	0.0500	"	"	"	"	"	"	

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Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG04@4.0'
2310459-11 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.20	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.5		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.68	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.38		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG04@6.5'
2310459-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.50	0.200		mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	165	0.400		"	"	"	"	"	"	
Cadmium	0.235	0.200		"	"	"	"	"	"	
Copper	4.68	0.400		"	"	"	"	"	"	
Lead	10.1	0.200		"	"	"	"	"	"	
Nickel	4.05	0.400		"	"	"	"	"	"	
Silver	0.0488	0.0200		"	"	"	"	"	"	
Zinc	13.7	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	29.2	0.0500		mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	10.4	0.0500		"	"	"	"	"	"	
Sodium	93.4	0.0500		"	"	"	"	"	"	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG04@6.5'
2310459-12 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.78	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	71.4		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.519	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.30		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG05@6.0"
2310459-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.02	0.200		mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	128	0.400		"	"	"	"	"	"	
Cadmium	0.329	0.200		"	"	"	"	"	"	
Copper	3.72	0.400		"	"	"	"	"	"	
Lead	9.55	0.200		"	"	"	"	"	"	
Nickel	2.91	0.400		"	"	"	"	"	"	
Silver	0.0471	0.0200		"	"	"	"	"	"	
Zinc	14.1	0.400		"	"	"	"	"	"	
Selenium	0.268	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	22.4	0.0500		mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	5.71	0.0500		"	"	"	"	"	"	
Sodium	58.0	0.0500		"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG05@6.0"
2310459-13 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.83	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.365	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.37		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG05@4.0'
2310459-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	0.750	0.200		mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	70.5	0.400		"	"	"	"	"	"	
Cadmium	ND	0.200		"	"	"	"	"	"	
Copper	2.66	0.400		"	"	"	"	"	"	
Lead	6.49	0.200		"	"	"	"	"	"	
Nickel	2.44	0.400		"	"	"	"	"	"	
Silver	0.0305	0.0200		"	"	"	"	"	"	
Zinc	8.98	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	68.2	0.0500		mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	37.2	0.0500		"	"	"	"	"	"	
Sodium	353	0.0500		"	"	"	"	"	"	

Summit Scientific

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PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG05@4.0'
2310459-14 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.54	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.4		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.07	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.17		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG05@6.5'
2310459-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ1257	10/31/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	1.23	0.200	mg/kg dry	1	BGJ1264	10/31/23	11/03/23	EPA 6020B	
Barium	134	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.91	0.400	"	"	"	"	"	"	
Lead	7.68	0.200	"	"	"	"	"	"	
Nickel	2.78	0.400	"	"	"	"	"	"	
Silver	0.0343	0.0200	"	"	"	"	"	"	
Zinc	10.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ1091	10/26/23	10/26/23	EPA 7196A	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	65.8	0.0500	mg/L dry	1	BGJ1201	10/30/23	11/04/23	EPA 6020B	
Magnesium	32.1	0.0500	"	"	"	"	"	"	
Sodium	284	0.0500	"	"	"	"	"	"	

Summit Scientific

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Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

BKG05@6.5'
2310459-15 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.18	0.00100	units	1	BGK0158	11/06/23	11/06/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	75.8		%	1	BGJ1242	10/31/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.57	0.0100	mmhos/cm	1	BGJ1232	10/31/23	10/31/23	EPA 120.1	

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

Date Sampled: **10/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.90		pH Units	1	BGJ1233	10/31/23	10/31/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

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 BGJ1257 - EPA 3050B

Blank (BGJ1257-BLK1)

Prepared: 10/31/23 Analyzed: 11/03/23

Boron ND 2.00 mg/L

LCS (BGJ1257-BS1)

Prepared: 10/31/23 Analyzed: 11/03/23

Boron 4.74 2.00 mg/L 5.00 94.8 80-120

Duplicate (BGJ1257-DUP1)

Source: 2310450-01

Prepared: 10/31/23 Analyzed: 11/03/23

Boron 0.246 2.00 mg/L 0.272 10.1 20

Matrix Spike (BGJ1257-MS1)

Source: 2310450-01

Prepared: 10/31/23 Analyzed: 11/03/23

Boron 4.94 2.00 mg/L 5.00 0.272 93.4 75-125

Matrix Spike Dup (BGJ1257-MSD1)

Source: 2310450-01

Prepared: 10/31/23 Analyzed: 11/03/23

Boron 4.13 2.00 mg/L 5.00 0.272 77.1 75-125 17.9 25

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

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 BGJ1264 - EPA 3050B

Blank (BGJ1264-BLK1)

Prepared: 10/31/23 Analyzed: 11/03/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGJ1264-BS1)

Prepared: 10/31/23 Analyzed: 11/03/23

Arsenic	41.6	0.200	mg/kg wet	40.0	104	80-120
Barium	33.6	0.400	"	40.0	84.1	80-120
Cadmium	1.69	0.200	"	2.00	84.5	80-120
Copper	42.8	0.400	"	40.0	107	80-120
Lead	16.4	0.200	"	20.0	82.1	80-120
Nickel	42.1	0.400	"	40.0	105	80-120
Silver	1.74	0.0200	"	2.00	86.8	80-120
Zinc	41.1	0.400	"	40.0	103	80-120
Selenium	4.29	0.260	"	4.00	107	80-120

Duplicate (BGJ1264-DUP1)

Source: 2310453-01

Prepared: 10/31/23 Analyzed: 11/03/23

Arsenic	1.52	0.200	mg/kg dry	1.27	17.9	20	
Barium	72.4	0.400	"	95.8	27.8	20	QR-04
Cadmium	0.170	0.200	"	0.216	23.7	20	QR-01
Copper	3.02	0.400	"	3.28	8.15	20	
Lead	6.28	0.200	"	7.48	17.4	20	
Nickel	2.73	0.400	"	2.71	0.832	20	
Silver	0.0245	0.0200	"	0.0318	26.2	20	QR-01
Zinc	11.2	0.400	"	11.7	4.25	20	
Selenium	0.381	0.260	"	0.397	4.15	20	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

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 BGJ1264 - EPA 3050B

Matrix Spike (BGJ1264-MS1)			Source: 2310453-01		Prepared: 10/31/23 Analyzed: 11/03/23					
Arsenic	17.3	0.200	mg/kg dry	46.2	1.27	34.7	75-125			QM-07
Barium	128	0.400	"	46.2	95.8	70.7	75-125			QM-07
Cadmium	2.12	0.200	"	2.31	0.216	82.4	75-125			
Copper	19.5	0.400	"	46.2	3.28	35.2	75-125			QM-07
Lead	24.3	0.200	"	23.1	7.48	73.0	75-125			QM-07
Nickel	19.1	0.400	"	46.2	2.71	35.4	75-125			QM-07
Silver	1.92	0.0200	"	2.31	0.0318	81.9	75-125			
Zinc	27.9	0.400	"	46.2	11.7	35.1	75-125			QM-07
Selenium	5.06	0.260	"	4.62	0.397	101	75-125			

Matrix Spike Dup (BGJ1264-MSD1)			Source: 2310453-01		Prepared: 10/31/23 Analyzed: 11/03/23					
Arsenic	17.6	0.200	mg/kg dry	46.2	1.27	35.3	75-125	1.70	25	QM-07
Barium	133	0.400	"	46.2	95.8	81.5	75-125	3.81	25	
Cadmium	2.19	0.200	"	2.31	0.216	85.7	75-125	3.53	25	
Copper	19.7	0.400	"	46.2	3.28	35.5	75-125	0.801	25	QM-07
Lead	25.3	0.200	"	23.1	7.48	77.4	75-125	4.07	25	
Nickel	19.3	0.400	"	46.2	2.71	36.0	75-125	1.38	25	QM-07
Silver	1.99	0.0200	"	2.31	0.0318	84.7	75-125	3.33	25	
Zinc	28.3	0.400	"	46.2	11.7	36.0	75-125	1.52	25	QM-07
Selenium	4.90	0.260	"	4.62	0.397	97.7	75-125	3.07	25	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

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 BGJ1091 - 3060A Mod

Blank (BGJ1091-BLK1)

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGJ1091-BS1)

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent 25.4 0.30 mg/kg wet 25.0 102 80-120

Duplicate (BGJ1091-DUP1)

Source: 2310453-01

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGJ1091-MS1)

Source: 2310453-01

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent 27.7 0.30 mg/kg dry 28.8 ND 96.0 75-125

Matrix Spike Dup (BGJ1091-MSD1)

Source: 2310453-01

Prepared & Analyzed: 10/26/23

Chromium, Hexavalent 27.5 0.30 mg/kg dry 28.8 ND 95.4 75-125 0.627 20

Summit Scientific

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PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

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 BGJ1201 - General Preparation

Blank (BGJ1201-BLK1)

Prepared: 10/30/23 Analyzed: 11/04/23

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

LCS (BGJ1201-BS1)

Prepared: 10/30/23 Analyzed: 11/04/23

Calcium	4.39	0.0500	mg/L wet	5.00	87.8	70-130
Magnesium	5.51	0.0500	"	5.00	110	70-130
Sodium	5.38	0.0500	"	5.00	108	70-130

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Fremont Environmental	Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman	
PO Box 1289	Project Number: UWRWE-A2617-ABN	Reported:
Wellington CO, 80549	Project Manager: Paul Henchan	11/06/23 09:38

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

Summit Scientific

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

Batch BGJ1242 - General Preparation

Duplicate (BGJ1242-DUP1)	Source: 2310140-03			Prepared & Analyzed: 10/31/23						
% Solids	79.3		%		78.4			1.14	20	

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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman
Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

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 BGJ1232 - General Preparation

Blank (BGJ1232-BLK1)

Prepared & Analyzed: 10/31/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGJ1232-BS1)

Prepared & Analyzed: 10/31/23

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BGJ1232-DUP1)

Source: 2310459-01

Prepared & Analyzed: 10/31/23

Specific Conductance (EC) 0.193 0.0100 mmhos/cm 0.196 1.64 20

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman

Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

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 BGJ1233 - General Preparation

LCS (BGJ1233-BS1)

Prepared & Analyzed: 10/31/23

pH	9.02	pH Units	9.18	98.3	95-105
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Duplicate (BGJ1233-DUP1)

Source: 2310459-01

Prepared & Analyzed: 10/31/23

pH	7.81	pH Units	7.81	0.00	20
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Project: Noble - Volkens Coleman T4N-R64W-S23 L01/Coleman

Project Number: UWRWE-A2617-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:38

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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