

Marick 1-A Pit & Facilities
Facility ID: 117567 & 117568 (Pits) & 317092 (Location)
Remediation # 32117
Central Operating Company



SITE INVESTIGATION REPORT

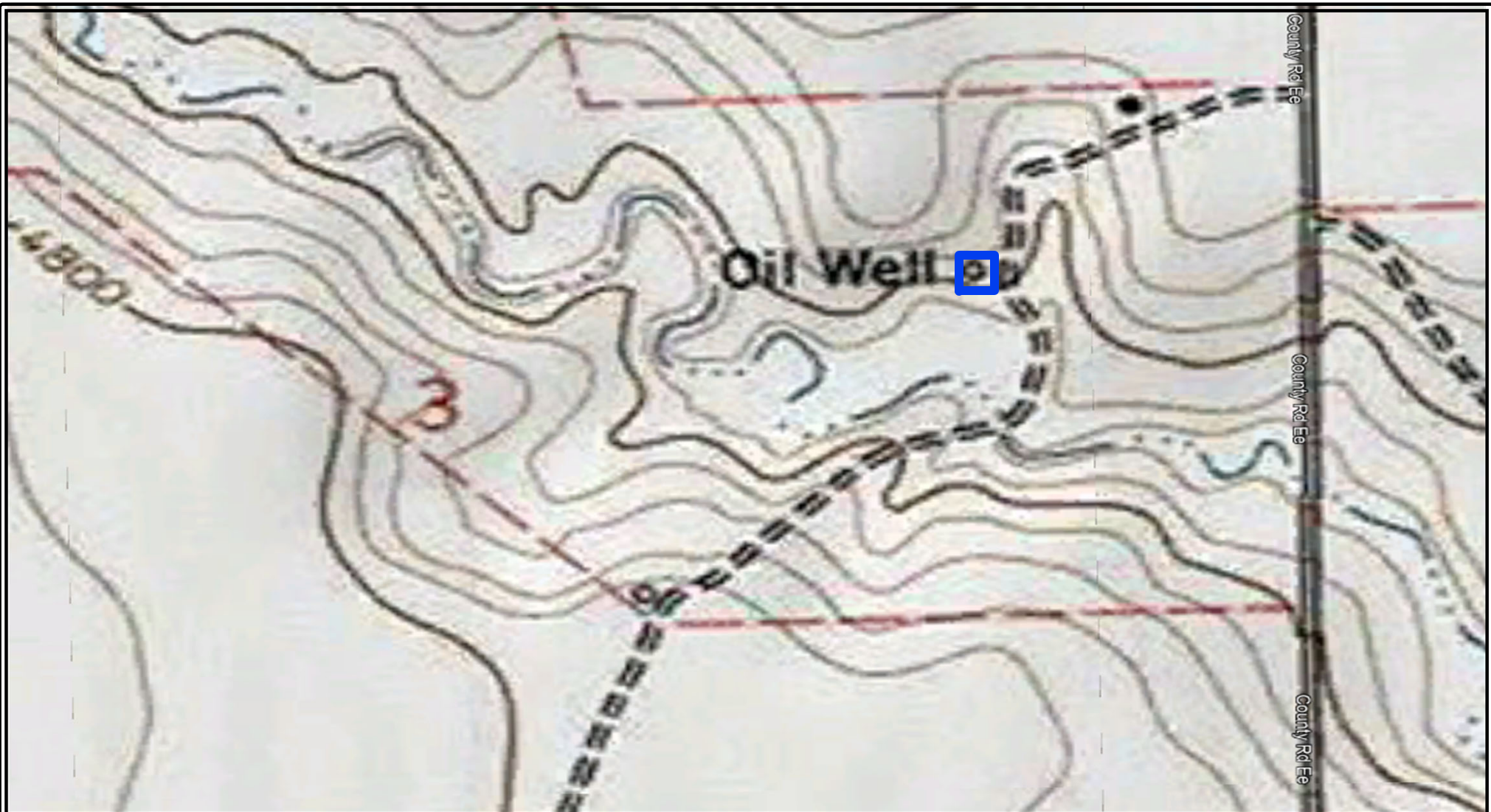
September 25, 2024



FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Soil Sample Location Map

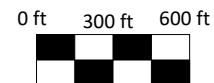


CENTRAL OPERATING, INC
MARICK A-1
05-121-08619
SENE S3, T3S R52W
TOPOGRAPHY MAP

Legend



Location Boundary



Prepared By:
Ardor Environmental LLC

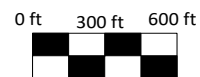
September 1, 2023



CENTRAL OPERATING, INC
MARICK A-2
LOCATION ID 317092
SENE S3, T3S R52W
SOIL SAMPLING TANK BATTERY/PITS MAP

Legend

- 3/4/2024 Soil Sample Locations
- Soil Samples not taken due to standing water in pits



Prepared By:
Ardor Environmental LLC

March 15, 2024



SPW16 @ 4'		SPW16 @ 6'	
7/3/2024			
PID	0.1	PID	0.1
EC	0.65	EC	0.285
SAR	0.682	SAR	0.199
pH	8.5	pH	8.39
Boron	0.117	Boron	0.13
Arsenic	3.881	Arsenic	5.222

NPW8 @ 4'	
7/3/2024	
PID	0
EC	9.38
SAR	1.738
pH	8.27
Boron	0.122
Arsenic	4.209

NPW5 @ 4'	
7/3/2024	
PID	4.3
EC	1.687
SAR	1.886
pH	7.29
Boron	0.307
Arsenic	2.509

NPW6 @ 4'		NPW6 @ 6'	
7/3/2024			
PID	0.4	PID	0.5
EC	0.618	EC	0.316
SAR	0.504	SAR	0.402
pH	8.36	pH	8.38
Boron	0.072	Boron	0.153
Arsenic	2.256	Arsenic	4.69

SPW15 @ 4'	
7/3/2024	
PID	0
EC	1.195
SAR	0.768
pH	8.04
Boron	0.187
Arsenic	3.384

SPW11 @ 4'		SPW11 @ 6'	
7/3/2024			
PID	0.5	PID	1
EC	1.023	EC	0.849
SAR	0.982	SAR	1.204
pH	8.51	pH	8.42
Boron	0.194	Boron	0.2
Arsenic	3.674	Arsenic	5.152

SPW12 @ 4'		SPW12 @ 6'	
7/3/2024			
PID	0.1	PID	0
EC	0.718	EC	0.347
SAR	1.029	SAR	0.921
pH	8.65	pH	8.59
Boron	0.147	Boron	0.213
Arsenic	3.436	Arsenic	5.879

SPW14 @ 4'		SPW14 @ 6'	
7/3/2024			
PID	0.2	PID	0
EC	3.02	EC	2.63
SAR	16.81	SAR	17.631
pH	8.95	pH	8.78
Boron	1.736	Boron	1.482
Arsenic	2.995	Arsenic	4.495

SPW13 @ 4'		SPW13 @ 6'	
7/3/2024			
PID	0.2	PID	0
EC	0.694	EC	0.531
SAR	2.286	SAR	2.75
pH	8.81	pH	8.65
Boron	0.44	Boron	0.531
Arsenic	3.797	Arsenic	5.118

The aerial image in this map may not reflect the current ground conditions of this location

CENTRAL OPERATING LLC

MARICK A-1

FACILITY ID: 117567

SENE S3, T3S R52W

PIT WALL 7/3/2024 SOIL SAMPLE MAP

0 ft 50 ft 100 ft
APPROXIMATE SCALE IN FEET

Legend

- Soil Sample Exceeds Table 915-1 Levels
- Background Soil Sample
- Soil Sample In Compliance With Table 915-1

NOTES:
VALUES PRESENTED IN BOLD EXCEED CECMC TABLE 915-1 REGULATORY LIMITS

CECMC TABLE 915-1 SOIL STANDARDS

Compound	Concentrations
Boron	2mg/l
EC	<4mmhos/cm
pH	6-8.3
SAR	<6
Arsenic	0.68mg/kg

mg/l – milligrams per liter
mmhos/cm – millimhos per centimeter
mg/kg – milligrams per kilogram



Prepared By:
Ardor Environmental LLC

September 18, 2024

Imagery Source: Google Earth 2016



The aerial image in this map may not reflect the current ground conditions of this location

CENTRAL OPERATING LLC
MARICK A-1
FACILITY ID: 117567
SENE S3, T3S R52W
PIT FLOOR 5/29/2024 SOIL SAMPLE MAPS

Legend

- Soil Sample Exceeds Table 915-1 Levels
- Background Soil Sample
- Soil Sample In Compliance With Table 915-1

NOTES:
VALUES PRESENTED IN **BOLD** EXCEED CECMC TABLE 915-1 REGULATORY LIMITS

CECMC Table 915-1 Soil Standards	
Compound	Concentrations
Boron	2mg/l
EC	<4mmhos/cm
pH	6-8.3
SAR	<6

mg/l – milligrams per liter
mmhos/cm – millimhos per centimeter



Prepared By:
Ardor Environmental LLC

September 18, 2024

Imagery Source: Google Earth 2016



S Pit Floor W @ 1'
5/29/2024

benzene	ND
toluene	ND
ethylbenzene	ND
xylene (sum of o-, m- and p- isomers)	ND
1,2,4-trimethylbenzene	ND
1,3,5-trimethylbenzene	ND
acenaphthene	ND
anthracene	ND
benz(a)anthracene	ND
benzo(b)fluoranthene	ND
benzo(k)fluoranthene	ND
benzo(a)pyrene	ND
chrysene	ND
dibenzo(a,h)anthracene	ND
fluoranthene	ND
fluorene	ND
indeno(1,2,3-cd)pyrene	ND
1-methylnaphthalene	ND
2-methylnaphthalene	ND
naphthalene	ND
pyrene	ND

N Pit Floor @ 1'
5/29/2024

benzene	ND
toluene	ND
ethylbenzene	ND
xylene (sum of o-, m- and p- isomers)	ND
1,2,4-trimethylbenzene	ND
1,3,5-trimethylbenzene	ND
acenaphthene	ND
anthracene	ND
benz(a)anthracene	ND
benzo(b)fluoranthene	ND
benzo(k)fluoranthene	ND
benzo(a)pyrene	ND
chrysene	ND
dibenzo(a,h)anthracene	ND
fluoranthene	ND
fluorene	ND
indeno(1,2,3-cd)pyrene	ND
1-methylnaphthalene	ND
2-methylnaphthalene	ND
naphthalene	ND
pyrene	ND

S Pit Floor E @ 1'
5/29/2024

benzene	ND
toluene	ND
ethylbenzene	ND
xylene (sum of o-, m- and p- isomers)	ND
1,2,4-trimethylbenzene	ND
1,3,5-trimethylbenzene	ND
acenaphthene	ND
anthracene	ND
benz(a)anthracene	ND
benzo(b)fluoranthene	ND
benzo(k)fluoranthene	ND
benzo(a)pyrene	ND
chrysene	ND
dibenzo(a,h)anthracene	ND
fluoranthene	ND
fluorene	ND
indeno(1,2,3-cd)pyrene	ND
1-methylnaphthalene	ND
2-methylnaphthalene	ND
naphthalene	ND
pyrene	ND

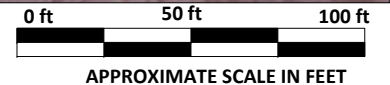
The aerial image in this map may not reflect
the current ground conditions of this location

CENTRAL OPERATING LLC
MARICK A-1

FACILITY ID: 117567

SENE S3, T3S R52W

PIT FLOOR 5/29/2024 SOIL SAMPLE MAPS



Legend



Soil Sample Exceeds Table 915-1 Levels

Background Soil Sample

Soil Sample In Compliance With Table 915-1

NOTES: VALUES PRESENTED IN **BOLD** EXCEED CECMC

TABLE 915-1 REGULATORY LIMITS

CECMC TABLE 915-1 SOIL STANDARDS			
Compound	Concentrations (mg/kg)	Compound	Concentrations (mg/kg)
Benzene	1.2	Benzo(b)- fluoranthene	1.1
Toluene	490	Benzo(k)- fluoranthene	11
Ethylbenzene	5.8	Chrysene	110
Xylenes	58	Dibenzo(a,h)- anthracene	0.11
1,2,4-TMB	30	Fluoranthene	240
1,3,5-TMB	27	Fluorene	240
Acenaphthene	360	Indeno (1,2,3-cd)-pyrene	1.1
Anthracene	1800	Naphthalene	2
Benzo(a)-anthracene	1.1	Pyrene	180
Benzo(a)-pyrene	0.11		

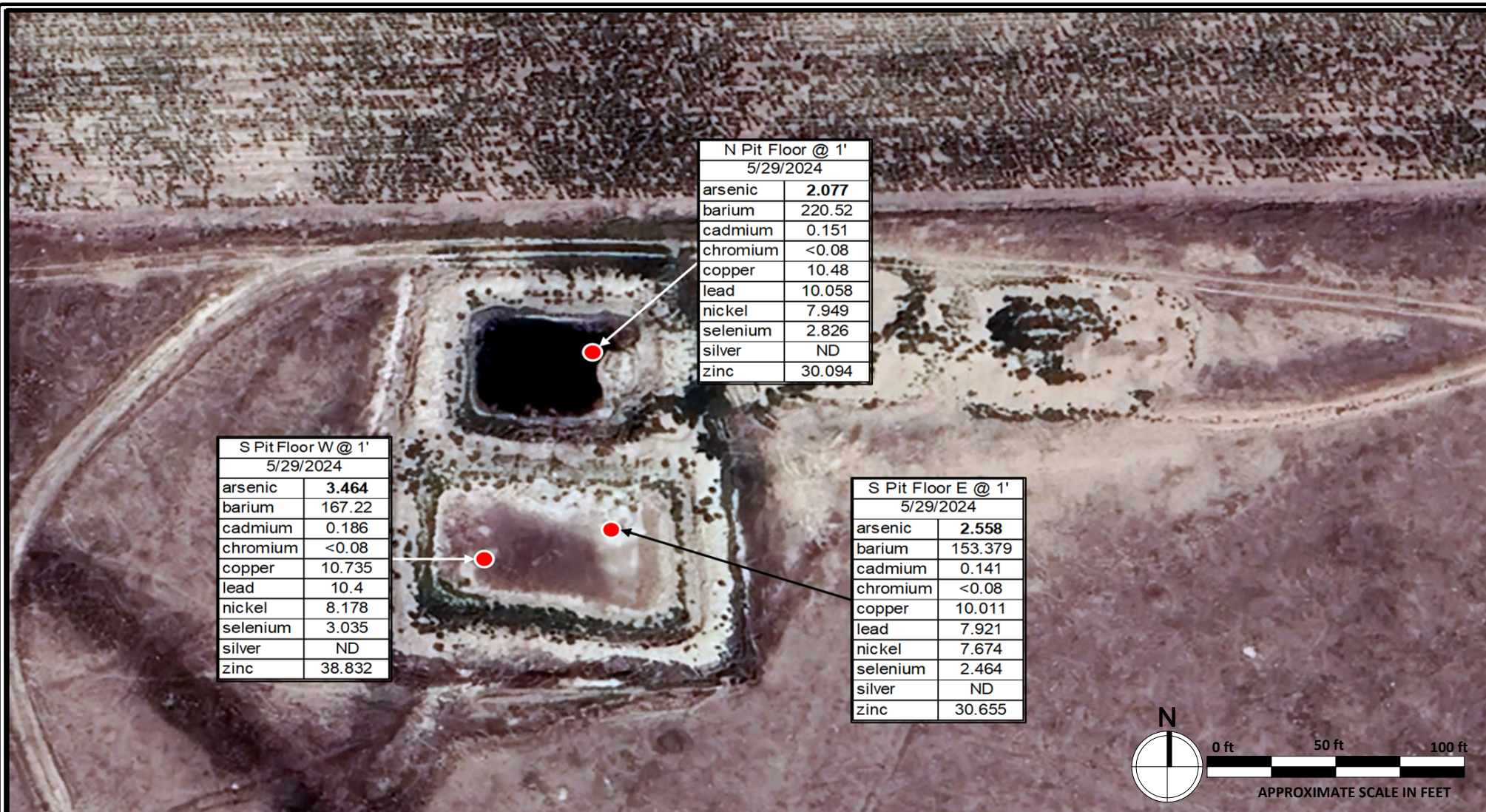
mg/kg – milligrams per kilogram



Prepared By:
Ardor Environmental LLC

September 18, 2024

Imagery Source: Google Earth 2016



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CENTRAL OPERATING LLC
MARICK A-1
FACILITY ID: 117567
SENE S3, T3S R52W
PIT FLOOR 5/29/2024 SOIL SAMPLE MAPS

Legend



Soil Sample Exceeds Table 915-1 Levels

Background Soil Sample

Soil Sample In Compliance With Table 915-1

NOTES: VALUES PRESENTED IN **BOLD** EXCEED CECMC

TABLE 915-1 REGULATORY LIMITS

CECMC TABLE 915-1 SOIL STANDARDS			
Compound	Concentrations (mg/kg)	Compound	Concentrations (mg/kg)
Arsenic	0.68	Lead	400
Barium	15000	Nickel	1500
Cadmium	71	Selenium	390
Chromium (VI)	0.3	Silver	390
Copper	3100	Zinc	23000

mg/kg – milligrams per kilogram



Prepared By:
Ardor Environmental LLC

September 18, 2024

Imagery Source: Google Earth 2016

BG1 @ 4'		BG1 @ 6'	
8/28/2024		8/28/2024	
Boron	0.28	Boron	0.45
EC	0.73	EC	0.57
pH	8.78	pH	9.18
SAR	2.24	SAR	4.65

NPW9 @ 4'		NPW9 @ 6'	
8/28/2024		8/28/2024	
Boron	0.28	Boron	0.4
EC	0.97	EC	0.52
pH	8.68	pH	8.81
SAR	1.88	SAR	1.8

SPW17 @ 4'		SPW17 @ 6'	
8/28/2024		8/28/2024	
Boron	0.19	Boron	0.23
EC	0.64	EC	0.39
pH	8.7	pH	8.96
SAR	0.99	SAR	0.85

SPW22 @ 4'		SPW22 @ 6'	
8/28/2024		8/28/2024	
Boron	0.16	Boron	0.15
EC	0.58	EC	0.42
pH	8.44	pH	8.65
SAR	0.22	SAR	0.44

SPW21 @ 4'		SPW21 @ 6'	
8/28/2024		8/28/2024	
Boron	0.16	Boron	0.25
EC	1.04	EC	0.54
pH	8.34	pH	8.37
SAR	0.78	SAR	0.2

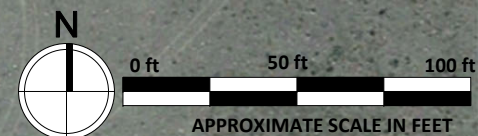
SPW20 @ 4'		SPW20 @ 6'	
8/28/2024		8/28/2024	
Boron	1.27	Boron	1.47
EC	2.97	EC	2.94
pH	9.05	pH	9.11
SAR	19.45	SAR	14.95

SPW18 @ 4'		SPW18 @ 6'	
8/28/2024		8/28/2024	
Boron	0.09	Boron	0.15
EC	0.58	EC	0.34
pH	8.61	pH	8.85
SAR	0.47	SAR	0.49

SPW19 @ 4'		SPW19 @ 6'	
8/28/2024		8/28/2024	
Boron	0.61	Boron	1.22
EC	0.98	EC	1.27
pH	8.97	pH	9.17
SAR	5.5	SAR	7.17

BG2 @ 4'		BG2 @ 6'	
8/28/2024		8/28/2024	
Boron	1.12	Boron	1.47
EC	1.57	EC	6.46
pH	8.63	pH	8.06
SAR	5.08	SAR	2.63

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CENTRAL OPERATING LLC
MARICK A-1
FACILITY ID: 117567
SENE S3, T3S R52W
SOIL SAMPLE MAP

Legend

- Soil Sample Exceeds Table 915-1 Levels
- Background Soil Sample
- Soil Sample In Compliance With Table 915-1

NOTES:
VALUES PRESENTED IN **BOLD** EXCEED CECMC TABLE 915-1 REGULATORY LIMITS

ECMC Table 915-1 Soil Standards	
Compound	Concentrations
Boron	2mg/l
EC	<4mmhos/cm
pH	6-8.3
SAR	<6

mg/l – milligrams per liter
mmhos/cm – millimhos per centimeter



Prepared By:
Ardor Environmental LLC

September 18, 2024

Imagery Source: Google Earth 2016



TABLES

Table 1: Photoionization Detector Summary

Table 2: Soil Analytical Results Summary

Table 3: Polycyclic Aromatic Hydrocarbons Analytical Results Summary

Table 4: Metals Analytical Results Summary

TABLE 1
 PHOTOIONIZATION DETECTOR READING SUMMARY
 MARICK A-1 PITS AND TANK BATTERY
 39.822589, -103.184897
 SENE S3 T3S R52W
 WASHINGTON COUNTY, COLORADO
 LOCATION ID 317092

Sample Location (Lat/Long)	Sample Date	Approximate Depth	PID Reading (ppm)	Lab Submission (Y/N)
East Tank 39.824426, -103.183005	3/4/2024	18"	0.8	Y
Central Tank 39.824428, -103.183051	3/4/2024	18"	0.5	Y
West Tank 39.824424, -103.183093	3/4/2024	18"	0.7	Y
FL @ Treater 39.824414, -103.183270	10/19/2023	4'	0.5	Y
N Pit N Wall 39.824462, -103.183810	3/4/2024	4'	0.3	Y
N Pit E Wall 39.824392, -103.183724	3/4/2024	4'	0	Y
N Pit S Wall 39.824315, -103.183805	3/4/2024	4'	0	Y
N Pit W Wall 39.824380, -103.183917	3/4/2024	4'	0.0	Y
S Pit N Wall W 39.824253, -103.183896	3/4/2024	4'	0.1	Y
S Pit N Wall E 39.824244, -103.183753	3/4/2024	4'	0.1	Y
S Pit E Wall N 39.824194, -103.183629	3/4/2024	4'	0	Y
S Pit E Wall S 39.824077, -103.183615	3/4/2024	4'	0	Y
S Pit S Wall E 39.824016, -103.183735	3/4/2024	4'	0	Y
S Pit S Wall W 39.824023, -103.183915	3/4/2024	4'	0	Y
S Pit W Wall S 39.824094, -103.184018	3/4/2024	4'	0	Y
S Pit W Wall N 39.824203, -103.183896	3/4/2024	4'	0	Y
NPW5 39.824536, -103.18383	7/3/2024	4'	4.3	Y
NPW6 39.824437, -103.18361	7/3/2024	4'	0.4	Y
NPW6 39.824437, -103.18361	7/3/2024	6'	0.5	Y
NPW8 39.824399, -103.18406	7/3/2024	4'	0	Y
SPW11 39.824195, -103.18357	7/3/2024	4'	0.5	Y
SPW11 39.824195, -103.18357	7/3/2024	6'	1	Y
SPW12 39.824062, -103.18354	7/3/2024	4'	0.1	Y
SPW12 39.824062, -103.18354	7/3/2024	6'	0	Y
SPW13 39.823943, -103.18371	7/3/2024	4'	0.2	Y
SPW13 39.823943, -103.18371	7/3/2024	6'	0	Y
SPW14 39.82395, -103.18395	7/3/2024	4'	0.2	Y
SPW14 39.82395, -103.18395	7/3/2024	6'	0	Y

TABLE 1
 PHOTOIONIZATION DETECTOR READING SUMMARY
 MARICK A-1 PITS AND TANK BATTERY
 39.822589, -103.184897
 SENE S3 T3S R52W
 WASHINGTON COUNTY, COLORADO
 LOCATION ID 317092

Sample Location (Lat/Long)	Sample Date	Approximate Depth	PID Reading (ppm)	Lab Submission (Y/N)
SPW15 39.824091, -103.18414	7/3/2024	4'	0	Y
SPW16 39.824236, -103.18411	7/3/2024	4'	0.1	Y
SPW16 39.824236, -103.18411	7/3/2024	6'	0.1	Y
NPW9 39.824432, -103.183583	8/28/2024	4'	3.5	Y
NPW9 39.824432, -103.183583	8/28/2024	6'	1.1	Y
SPW17 39.824194, -103.183521	8/28/2024	4'	2.7	Y
SPW17 39.824194, -103.183521	8/28/2024	6'	2.7	Y
SPW18 39.824060, -103.183515	8/28/2024	4'	1.1	Y
SPW18 39.824060, -103.183515	8/28/2024	6'	1.2	Y
SPW19 39.823958, -103.183635	8/28/2024	4'	2	Y
SPW19 39.823958, -103.183635	8/28/2024	6'	2	Y
SPW20 39.823928, -103.184098	8/28/2024	4'	2.4	Y
SPW20 39.823928, -103.184098	8/28/2024	6'	1.9	Y
SPW21 39.823971, -103.184098	8/28/2024	4'	1.8	Y
SPW21 39.823971, -103.184098	8/28/2024	6'	2	Y
SPW22 39.824228, -103.184145	8/28/2024	4'	1.8	Y
SPW22 39.824228, -103.184145	8/28/2024	6'	1.7	Y
S Pit Floor W 39.824124, -103.183925	5/29/2024	1'	0.8	Y
S Pit Floor E 39.824166, -103.183728	5/29/2024	1'	0.2	Y
N Pit Floor 39.824394, -103.183757	5/29/2024	1'	0	Y
BG 1 39.824424, -103.184234	3/4/2024	18"	0.1	Y
BG 2 39.823904, -103.182887	3/4/2024	18"	0	Y
BG1 39.824424, -103.184234	8/28/2024	4'	1.1	Y
BG1 39.824424, -103.184234	8/28/2024	6'	1.8	Y
BG2 39.823904, -103.182887	8/28/2024	4'	1.8	Y
BG2 39.823904, -103.182887	8/28/2024	6'	1.6	Y

TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
MARICK A-1 PITS AND TANK BATTERY
39.822589, -103.184897
SENE S3 T3S R52W
WASHINGTON COUNTY, COLORADO
LOCATION ID 317092

Sample Location (Latitude/ Longitude)	Date	Approximate Depth (bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-RRO (mg/kg)	1,2,4-TMB (mg/kg)	1,3,5-TMB (mg/kg)	Boron (mg/kg)	Specific Conductance (mmhos/cm)	pH (pH units)	SAR
ECMC Table 915-1 Residential Soil Screening Levels			1.2	490	5.8	58	500			30	27	2	<4	6-8.3	<6
East Tank 39.824426, -103.183005	3/4/2024	18"	<0.00242	0.0027	<0.00500	<0.00654		ND		<0.00245	<0.00500	1.83	1.79	7.97	1.61
Central Tank 39.824428, -103.183051	3/4/2024	18"	<0.00242	<0.00263	<0.00500	<0.00654		ND		<0.00245	<0.00500	1.06	0.53	8.15	0.33
West Tank 39.824424, -103.183093	3/4/2024	18"	ND	<0.00263	<0.00500	<0.00654		ND		<0.00245	<0.00500	1.03	3.65	7.80	1.64
FL @ Treater 39.824414, -103.183270	10/19/2023	4'	ND	<0.00263	<0.00500	<0.00654		ND		<0.00245	<0.00500	1.67	0.73	8.17	0.67
N Pit N Wall 39.824462, -103.183810	3/4/2024	4'	ND	<0.00263	<0.00500	<0.00654		ND		<0.00245	<0.00500	2.93	0.55	8.93	23.25
N Pit E Wall 39.824392, -103.183724	3/4/2024	4'	ND	<0.00263	<0.00500	<0.00654		ND		<0.00245	<0.00500	0.67	0.44	9.41	17.19
N Pit S Wall 39.824315, -103.183805	3/4/2024	4'	ND	<0.00263	<0.00500	<0.00654		ND		<0.00245	<0.00500	2.77	1.29	8.81	46.16
N Pit W Wall 39.824380, -103.183917	3/4/2024	4'	<0.00242	<0.00263	<0.00500	<0.00654		ND		<0.00245	<0.00500	3.07	0.29	8.80	32.25
S Pit N Wall W 39.824253, -103.183896	3/4/2024	4'	ND	<0.00263	<0.00500	<0.00654		ND		<0.00245	<0.00500	6.68	6.67	9.47	124.28
S Pit N Wall E 39.824244, -103.183753	3/4/2024	4'	<0.00242	<0.00263	<0.0050	<0.00654		ND		<0.00245	<0.00500	3.38	6.46	9.44	109.58
S Pit E Wall N 39.824194, -103.183629	3/4/2024	4'	ND	<0.00263	ND	<0.00263		ND		<0.00245	<0.0050	2.74	7.95	9.56	157.54
S Pit E Wall S 39.824077, -103.183615	3/4/2024	4'	ND	<0.00263	<0.00500	<0.00654		ND		<0.00245	<0.00500	2.81	6.49	9.50	104.86
S Pit S Wall E 39.824016, -103.183735	3/4/2024	4'	ND	<0.00263	ND	<0.00654		ND		<0.00245	ND	3.54	5.55	8.93	43.79
S Pit S Wall W 39.824023, -103.183915	3/4/2024	4'	ND	<0.00263	ND	<0.00654		ND		<0.00245	ND	3.04	6.78	9.09	64.67
S Pit W Wall S 39.824094, -103.184018	3/4/2024	4'	ND	<0.00263	<0.00500	<0.00654		ND		<0.00245	<0.00500	2.86	9.21	8.79	82.96
S Pit W Wall N 39.824203, -103.183896	3/4/2024	4'	ND	<0.00263	<0.00500	<0.00654		ND		<0.00245	ND	2.91	5.65	9.21	102.47
NPW5 39.824536, -103.18383	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.307	1.687	7.29	1.886
NPW6 39.824437, -103.18361	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.072	0.618	8.36	0.504
NPW6 39.824437, -103.18361	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.153	0.316	8.38	0.402
NPW8 39.824399, -103.18406	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.122	9.38	8.27	1.738
SPW11 39.824195, -103.18357	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.194	1.023	8.51	0.982
SPW11 39.824195, -103.18357	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2	0.849	8.42	1.204
SPW12 39.824062, -103.18354	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.147	0.718	8.65	1.029
SPW12 39.824062, -103.18354	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.213	0.347	8.59	0.921
SPW13 39.823943, -103.18371	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.44	0.694	8.81	2.286
SPW13 39.823943, -103.18371	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.531	0.531	8.65	2.75
SPW14 39.82395, -103.18395	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.736	3.02	8.95	16.81
SPW14 39.82395, -103.18395	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.482	2.63	8.78	17.631
SPW15 39.824091, -103.18414	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.187	1.195	8.04	0.768
SPW16 39.824236, -103.18411	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.117	0.65	8.5	0.682
SPW16 39.824236, -103.18411	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.13	0.285	8.39	0.199
NPW9 39.824432, -103.183583	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28	0.97	8.68	1.88
NPW9 39.824432, -103.183583	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.40	0.52	8.81	1.80
SPW17 39.824194, -103.183521	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.19	0.64	8.70	0.99
SPW17 39.824194, -103.183521	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.23	0.39	8.96	0.85
SPW18 39.824060, -103.183515	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.09	0.58	8.61	0.47
SPW18 39.824060, -103.183515	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15	0.34	8.85	0.49
SPW19 39.823958, -103.183635	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.61	0.98	8.97	5.50
SPW19 39.823958, -103.183635	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.22	1.27	9.17	7.17
SPW20 39.823928, -103.184098	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.27	2.97	9.05	19.45
SPW20 39.823928, -103.184098	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.47	2.94	9.11	14.95

TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
MARICK A-1 PITS AND TANK BATTERY
39.822589, -103.184897
SENE S3 T3S R52W
WASHINGTON COUNTY, COLORADO
LOCATION ID 317092

[illegible]

TABLE 3
POLYCYCLIC AROMATIC HYDROCARBONS ANALYTICAL RESULTS
MARICK A-1 PITS AND TANK BATTERY
39.822589, -103.184897
SENE S3 T3S R52W
WASHINGTON COUNTY, COLORADO
LOCATION ID 317092

Sample Location (Latitude/ Longitude)	Date	Approximate Depth	1-Methyl- naphthalene (mg/kg)	2-Methyl- naphthalen e (mg/kg)	Acenaphthe ne (mg/kg)	Anthracen e (mg/kg)	Benzo(a)- anthracene (mg/kg)	Benzo(a)- pyrene (mg/kg)	Benzo(b)- fluoranthene (mg/kg)	Benzo(k)- fluoranthene (mg/kg)	Chrysen e (mg/kg)	Dibenzo(a, h)- anthracen e (mg/kg)	Fluorant hene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3- cd)- pyrene (mg/kg)	Naphthalen e (mg/kg)	Pyrene (mg/kg)
ECMC Table 915-1 Residential Soil Screening Levels			18	24	360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	2	180
East Tank 39.824426, -103.183005	3/4/2024	18"	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Central Tank 39.824428, -103.183051	3/4/2024	18"	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
West Tank 39.824424, -103.183093	3/4/2024	18"	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FL @ Treater 39.824414, -103.183270	10/19/2023	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N Pit N Wall 39.824462, -103.183810	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N Pit E Wall 39.824392, -103.183724	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N Pit S Wall 39.824315, -103.183805	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N Pit W Wall 39.824380, -103.183917	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S Pit N Wall W 39.824253, -103.183896	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S Pit N Wall E 39.824244, -103.183753	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S Pit E Wall N 39.824194, -103.183629	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S Pit E Wall S 39.824077, -103.183615	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S Pit S Wall E 39.824016, -103.183735	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S Pit S Wall W 39.824023, -103.183915	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S Pit W Wall S 39.824094, -103.184018	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S Pit W Wall N 39.824203, -103.183896	3/4/2024	4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NPW5 39.824536, -103.18383	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NPW6 39.824437, -103.18361	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NPW6 39.824437, -103.18361	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NPW8 39.824399, -103.18406	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW11 39.824195, -103.18357	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW11 39.824195, -103.18357	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW12 39.824062, -103.18354	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW12 39.824062, -103.18354	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW13 39.823943, -103.18371	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW13 39.823943, -103.18371	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW14 39.82395, -103.18395	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW14 39.82395, -103.18395	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW15 39.824091, -103.18414	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW16 39.824236, -103.18411	7/3/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW16 39.824236, -103.18411	7/3/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NPW9 39.824432, -103.183583	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NPW9 39.824432, -103.183583	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW17 39.824194, -103.183521	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

LOCATION ID 317092

Sample Location (Latitude/ Longitude)	Date	Approximate Depth	1-Methyl- naphthalene (mg/kg)	2-Methyl- naphthalene (mg/kg)	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)	Naphthalene (mg/kg)	Pyrene (mg/kg)
ECMC Table 915-1 Residential Soil Screening Levels			18	24	360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	2	180
SPW17 39.824194, -103.183521	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW18 39.824060, -103.183515	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW18 39.824060, -103.183515	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW19 39.823958, -103.183635	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW19 39.823958, -103.183635	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW20 39.823928, -103.184098	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW20 39.823928, -103.184098	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW21 39.823971, -103.184098	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW21 39.823971, -103.184098	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW22 39.824228, -103.184145	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW22 39.824228, -103.184145	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S Pit Floor W 39.824124, -103.183925	5/29/2024	1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S Pit Floor E 39.824166, -103.183728	5/29/2024	1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N Pit Floor 39.824394, -103.183757	5/29/2024	1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BG 1 39.824424, -103.184234	3/4/2024	18"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG 2 39.823904, -103.182887	3/4/2024	18"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG1 39.824424, -103.184234	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG1 39.824424, -103.184234	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG2 39.823904, -103.182887	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG2 39.823904, -103.182887	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ECMC = Energy & Carbon Management Commission																	

TABLE 4
METALS ANALYTICAL RESULTS
MARICK A-1 PITS AND TANK BATTERY
39.822589, -103.184897
SENE S3 T3S R52W
WASHINGTON COUNTY, COLORADO
LOCATION ID 317092

[illegible]

TABLE 4
METALS ANALYTICAL RESULTS
MARICK A-1 PITS AND TANK BATTERY
39.822589, -103.184897
SENE S3 T3S R52W
WASHINGTON COUNTY, COLORADO
LOCATION ID 317092

Sample Location (Latitude/ Longitude)	Date	Approximate Depth	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Hexavalent Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Residential Soil Screening Levels			0.68	15000	71	0.3	3100	400	1500	390	390	23000
SPW15 39.824091, -103.18414	7/3/2024	4'	3.384	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW16 39.824236, -103.18411	7/3/2024	4'	3.881	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW16 39.824236, -103.18411	7/3/2024	6'	5.222	NA	NA	NA	NA	NA	NA	NA	NA	NA
NPW9 39.824432, -103.183583	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NPW9 39.824432, -103.183583	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW17 39.824194, -103.183521	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW17 39.824194, -103.183521	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW18 39.824060, -103.183515	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW18 39.824060, -103.183515	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW19 39.823958, -103.183635	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW19 39.823958, -103.183635	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW20 39.823928, -103.184098	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW20 39.823928, -103.184098	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW21 39.823971, -103.184098	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW21 39.823971, -103.184098	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW22 39.824228, -103.184145	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SPW22 39.824228, -103.184145	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S Pit Floor W 39.824124, -103.183925	5/29/2024	1'	3.464	167.22	0.186	<0.08	10.735	10.4	8.178	3.035	ND	38.832
S Pit Floor E 39.824166, -103.183728	5/29/2024	1'	2.558	153.379	0.141	<0.08	10.011	7.921	7.674	2.464	ND	30.655
N Pit Floor 39.824394, -103.183757	5/29/2024	1'	2.077	220.52	0.151	<0.08	10.48	10.058	7.949	2.826	ND	30.094
BG 1 39.824424, -103.184234	3/4/2024	18"	5.01	166.95	0.28	0.1	10.78	14.7	11.17	3.87	<0.250	46.54
BG 2 39.823904, -103.182887	3/4/2024	18"	5.18	148.53	0.25	0.09	10.53	13.84	10.48	3.04	<0.250	45.79
BG1 39.824424, -103.184234	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG1 39.824424, -103.184234	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG2 39.823904, -103.182887	8/28/2024	4'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG2 39.823904, -103.182887	8/28/2024	6'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ECMC = Energy & Carbon Management Commission												
Arsenic is naturally occurring in Colorado at concentrations above ECMC Table 915-1 standards. 5.183 x 1.25=6.479												

Marick 1-A Pit & Facilities
Facility ID: 117567 & 117568 (Pits) & 317092 (Location)
Remediation # 32117
Central Operating Company



ATTACHMENT A

Laboratory Analytical Reports



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

September 11, 2024

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Mackenzie Smith

Project Name : Marick A-1

Project Number : N/A

Attached are the analytical results for Marick A-1 N/A received by Elevation Diagnostics, Division of Environmental Testing on August 29, 2024. This is associated with Elevation's number AA11631 .

The results were analyzed under the guidelines of various methods. These methods are identified in the report as follows: "SW" is referring to the EPA's SW-846 Compendium; "EPA" is referring to 40 CFR part 136; "HACH" is referring to a method which was validated by HACH®; "SM" is referring to a revision of the Standard Methods For the Examination of Water and Wastewater; and "ASTM" is referring to the standard test method set forth by ASTM International.

The analytical results in this report apply specifically to the samples listed in the attached Chain of Custody. This report may only be duplicated in full.

Any deviations to sample integrity, method specifications, or Elevation Diagnostics's standard operating procedures are documented in the report below.

Please contact us for any questions or comments concerning the content of this report.

Thank you,

Elevation Diagnostics, Division of Environmental Testing

Chain of Custody Form

Client: Central Operating
Address: _____
City/State/ZIP: _____
Phone: _____
Project Contact: Mackenzie Smith
msmith@ardereenvironmental.com

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045
800.440.5184

Project Name: Mapick #1 A-1
Project Location: _____
Collector Name: Bob Jones

					Preservative				Matrix			Analysis Requested							Notes			
Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO ₃	None	Other	Water	Soil	Other	Sar	EC	pH	Boron							
1	NPW9 @ 4'	8/28/24	12:34	3						X		X	X	X	X							
2	NPW9 @ 6'	↓	12:37	↓						X		X	X	X	X					HOLD		
3	SPW17 @ 4'		12:58								X		X	X	X	X						
4	SPW17 @ 6'		13:03								X		X	X	X	X					HOLD	
5	SPW18 @ 4'		13:11								X		X	X	X	X						
6	SPW18 @ 6'		13:15								X		X	X	X	X					HOLD HOLD	
7	SPW19 @ 4'		13:35								X		X	X	X	X						
8	SPW19 @ 6'		13:42								X		X	X	X	X					HOLD	
9	SPW20 @ 4'		13:54								X		X	X	X	X						
10	SPW20 @ 6'		↓		14:03	↓						X		X	X	X	X					HOLD

Relinquished By: Bob Jones

Date/Time: 8/28/24 18:39

Relinquished By: Pylan Johnson

Date/Time: 18:39 08-28-24

Relinquished By: _____

Date/Time: _____

Lab
Use
Only

Observed Temperature Upon Receipt: 11.2C

Corrected Temperature Upon Receipt: 12.5C

Thermometer #: EDX 238

Correction Factor: +1.3C

Samples Intact: ☒ Yes ☐ No

pH Checked: ☒ Yes ☐ No

pH Adjusted: ☒ Yes ☐ No

Name/Lot Number of Adjustment: _____

2024-08-29-001-1

Scan to
Deliver
Samples



Chain of Custody Form

2022

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045
800.440.5184

Client: Central Operating
Address: _____
City/State/ZIP: _____
Phone: _____
Project Contact: Mackenzie Smith
msmith@elevationenvironmental.com

Project Name: Marick A-1
Project Location: _____
Collector Name: Jacob Smith

Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested								Notes
					HCl	HNO ₃	None	Other	Water	Soil	Other	SAH	LC	PH	Baron					
1	SPW21@4'	8/28/24	14:34	3						X		X	X	X	X					
2	SPW21@6'	↓	15:14	1						X		X	X	X	X					HOLD
3	SPW22@4'		15:34	1						X		X	X	X	X					
4	SPW22@6'		15:38	1						X		X	X	X	X					HOLD
5	BG1@4'		15:53	1						X		X	X	X	X					
6	BG1@6'		15:58	1						X		X	X	X	X					HOLD
7	BG2@4'		16:38	1						X		X	X	X	X					
8	BG2@6'		16:40	1						X		X	X	X	X					HOLD
9																				
10																				

Relinquished By: JamesDate/Time: 8/28/24 18:39Relinquished By: Dylan SamsonDate/Time: 18:39 08-28-24

Relinquished By: _____

Date/Time: _____

Scan to
Deliver
Samples

EFOR-008.002

Lab
Use
Only

Observed Temperature Upon Receipt: 11.2°
Corrected Temperature Upon Receipt: 12.5°
Thermometer #: EDx 238
Correction Factor: +1.3°

Samples Intact: Yes No
pH Checked: Yes No
pH Adjusted: Yes No
Name/Lot Number of Adjustment: _____

2024-08-29-001-2





Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

Report Date : 9/11/2024

Report Time : 17:58

FINAL RESULTS REPORT

Project Manager: Mackenzie Smith

Project Name: Marick A-1

Project Number: N/A

Sample ID	Customer ID	Collected	Dilution	Result	Units	MDL	Method Ref.
Analyte Name		Analysis Start					Recovery
AA11631-1	SPW21@4'	Collected : 08/28/2024	14:34				
SAR - Calcium		09/05/2024	10:25	10.00	7.25	mEq/L	EPA 6020B
SAR - Magnesium		09/05/2024	10:25	10.00	1.48	mEq/L	EPA 6020B
SAR - Sodium		09/05/2024	10:25	10.00	1.64	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/05/2024	10:25	10.00	0.78	No Unit	EPA 6020B
Soil Conductivity		09/03/2024	17:18		1.0380	mmhos/cm	0.0005 USDA 60
AA11631-2	SPW21@4'	Collected : 08/28/2024	14:34				
Hot Water Soluble Boron		09/05/2024	09:46		0.16	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		09/03/2024	16:39		21.5	°C	
pH, Soils		09/03/2024	16:39		8.34	SU	0.01 EPA 9045D
AA11632-1	SPW21@6'	Collected : 08/28/2024	15:14				
SAR - Calcium		09/10/2024	16:31	10.00	3.48	mEq/L	EPA 6020B
SAR - Magnesium		09/10/2024	16:31	10.00	1.02	mEq/L	EPA 6020B
SAR - Sodium		09/10/2024	16:31	10.00	0.30	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/10/2024	16:31	10.00	0.20	No Unit	EPA 6020B
Soil Conductivity		09/09/2024	13:03		0.54	mmhos/cm	0.0005 USDA 60
AA11632-2	SPW21@6'	Collected : 08/28/2024	15:14				
Hot Water Soluble Boron		09/09/2024	09:18		0.25	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		09/06/2024	12:51		20.2	°C	
pH, Soils		09/06/2024	12:51		8.37	SU	0.01 EPA 9045D
AA11633-1	SPW22@4'	Collected : 08/28/2024	15:34				
SAR - Calcium		09/05/2024	10:25	10.00	3.61	mEq/L	EPA 6020B
SAR - Magnesium		09/05/2024	10:25	10.00	1.23	mEq/L	EPA 6020B
SAR - Sodium		09/05/2024	10:25	10.00	0.34	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/05/2024	10:25	10.00	0.22	No Unit	EPA 6020B
Soil Conductivity		09/03/2024	17:18		0.5750	mmhos/cm	0.0005 USDA 60
AA11633-2	SPW22@4'	Collected : 08/28/2024	15:34				
Hot Water Soluble Boron		09/05/2024	09:46		0.16	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		09/03/2024	16:39		21.5	°C	
pH, Soils		09/03/2024	16:39		8.44	SU	0.01 EPA 9045D
AA11634-1	SPW22@6'	Collected : 08/28/2024	15:38				
SAR - Calcium		09/10/2024	16:31	10.00	2.32	mEq/L	EPA 6020B
SAR - Magnesium		09/10/2024	16:31	10.00	0.83	mEq/L	EPA 6020B
SAR - Sodium		09/10/2024	16:31	10.00	0.55	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/10/2024	16:31	10.00	0.44	No Unit	EPA 6020B
Soil Conductivity		09/09/2024	13:03		0.42	mmhos/cm	0.0005 USDA 60
AA11634-2	SPW22@6'	Collected : 08/28/2024	15:38				
Hot Water Soluble Boron		09/09/2024	09:18		0.15	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		09/06/2024	12:51		20.4	°C	



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 9/11/2024

Report Time : 17:58

Project Manager: Mackenzie Smith

Project Name: Marick A-1

Project Number: N/A

Sample ID	Customer ID	Collected	Dilution	Result	Units	MDL	Method Ref.
Analyte Name		Analysis Start					Recovery

pH, Soils		09/06/2024	12:51	8.65	SU	0.01	EPA 9045D
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AA11635-1	BG1@4'	Collected :	08/28/2024	15:53			
SAR - Calcium		09/05/2024	10:25	10.00	2.25	mEq/L	EPA 6020B
SAR - Magnesium		09/05/2024	10:25	10.00	1.15	mEq/L	EPA 6020B
SAR - Sodium		09/05/2024	10:25	10.00	2.92	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/05/2024	10:25	10.00	2.24	No Unit	EPA 6020B
Soil Conductivity		09/03/2024	17:18		0.7310	mmhos/cm	0.0005 USDA 60
AA11635-2	BG1@4'	Collected :	08/28/2024	15:53			
Hot Water Soluble Boron		09/05/2024	09:46		0.28	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		09/03/2024	16:39		21.7	°C	
pH, Soils		09/03/2024	16:39		8.78	SU	0.01 EPA 9045D

AA11636-1	BG1@6'	Collected :	08/28/2024	15:58			
SAR - Calcium		09/10/2024	16:31	10.00	0.79	mEq/L	EPA 6020B
SAR - Magnesium		09/10/2024	16:31	10.00	0.28	mEq/L	EPA 6020B
SAR - Sodium		09/10/2024	16:31	10.00	3.40	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/10/2024	16:31	10.00	4.65	No Unit	EPA 6020B
Soil Conductivity		09/09/2024	13:03		0.57	mmhos/cm	0.0005 USDA 60
AA11636-2	BG1@6'	Collected :	08/28/2024	15:58			
Hot Water Soluble Boron		09/09/2024	09:18		0.45	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		09/06/2024	12:51		20.1	°C	
pH, Soils		09/06/2024	12:51		9.18	SU	0.01 EPA 9045D

AA11637-1	BG2@4'	Collected :	08/28/2024	16:38			
SAR - Calcium		09/05/2024	10:25	10.00	3.61	mEq/L	EPA 6020B
SAR - Magnesium		09/05/2024	10:25	10.00	1.39	mEq/L	EPA 6020B
SAR - Sodium		09/05/2024	10:25	10.00	8.04	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/05/2024	10:25	10.00	5.08	No Unit	EPA 6020B
Soil Conductivity		09/03/2024	17:18		1.5700	mmhos/cm	0.0005 USDA 60
AA11637-2	BG2@4'	Collected :	08/28/2024	16:38			
Hot Water Soluble Boron		09/05/2024	09:46		1.12	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		09/03/2024	16:39		21.4	°C	
pH, Soils		09/03/2024	16:39		8.63	SU	0.01 EPA 9045D

AA11638-1	BG2@6'	Collected :	08/28/2024	16:40			
SAR - Calcium		09/10/2024	16:31	10.00	57.91	mEq/L	EPA 6020B
SAR - Magnesium		09/10/2024	16:31	10.00	11.49	mEq/L	EPA 6020B
SAR - Sodium		09/10/2024	16:31	10.00	15.50	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/10/2024	16:31	10.00	2.63	No Unit	EPA 6020B
Soil Conductivity		09/09/2024	13:03		6.46	mmhos/cm	0.0005 USDA 60

AA11638-2	BG2@6'	Collected :	08/28/2024	16:40			
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**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 9/11/2024**Report Time :** 17:58**Project Manager:** Mackenzie Smith**Project Name:** Marick A-1**Project Number:** N/A

Sample ID	Customer ID	Collected		Dilution	Result	Units	MDL	Method Ref.
Analyte Name		Analysis Start						Recovery
Hot Water Soluble Boron		09/09/2024	09:18		1.47	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		09/06/2024	12:51		20.1	°C		
pH, Soils		09/06/2024	12:51		8.06	SU	0.01	EPA 9045D

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 9/11/2024**Report Time :** 17:58**Project Manager:** Mackenzie Smith**Project Name:** Marick A-1**Project Number:** N/A**QC Report**

QC	Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
BORON-4633										
DUP	AA11621	0.30	0.050	mg/kg					6.8966	-15 - 15
MB	AA11766	0.01		mg/kg						
LCS	AA11767	1.05		mg/kg	1.00		105	80 - 120		
LCS	AA11768	9.55		mg/kg	9.00		106	80 - 120		
BORON-4670										
DUP	AA11622	0.37	0.050	mg/kg					7.7922	-15 - 15
MB	AA11834	0.01		mg/kg						
LCS	AA11835	1.11		mg/kg	1.00		111	80 - 120		
LCS	AA11836	10.11		mg/kg	10.00		101	80 - 120		
ECSOIL_MMHOS-4611										
DUP	AA11621	0.933		mmhos/cm					3.6823	
LCS	AA11727	10.29		mmhos/cm	10.00		103			
LCS	AA11728	10.29		mmhos/cm	10.00		103			
ECSOIL_MMHOS-4699										
DUP	AA11622	0.51		mmhos/cm					1.9417	
LCS	AA11853	10.16		mmhos/cm	10.00		102			
LCS	AA11854	10.15		mmhos/cm	10.00		102			
PH_S-4620										
DUP	AA11627	8.89	0.01	S.U.					0.8958566629	-5 - 5
LCS	AA11744	6.89	0.01	S.U.	6.86		100	95 - 105		
LCS	AA11745	6.88	0.01	S.U.	6.86		100	95 - 105		
PH_S-4664										
DUP	AA11634	8.72	0.01	S.U.					0.8059873344	-5 - 5
LCS	AA11832	6.89	0.01	S.U.	6.86		100	95 - 105		
LCS	AA11833	6.88	0.01	S.U.	6.86		100	95 - 105		



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 9/11/2024

Report Time : 17:58

Project Manager: Mackenzie Smith

Project Name: Marick A-1

Project Number: N/A

QC Report

QC	Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
SAR-4645										
AA11621										
Dup	Calcium	5.92		mEq/L	5.92	5.94			0.337	
Dup	Magnesium	1.54		mEq/L	1.54	1.53			0.651	
Dup	Sodium	3.69		mEq/L	3.69	3.64			1.36	
AA11797										
MB	Calcium	0.00		mEq/L						
MB	Magnesium	0.00		mEq/L						
MB	Sodium	0.02		mEq/L						
AA11798										
LCS	Calcium	9.90		ppm			99.0			
LCS	Magnesium	9.71		ppm			97.1			
LCS	Sodium	9.26		ppm			92.6			
AA11799										
LCS	Calcium	458.43		ppm			91.7			
LCS	Magnesium	447.64		ppm			89.5			
LCS	Sodium	449.71		ppm			89.9			
SAR-4712										
AA11622										
Dup	Calcium	2.29		mEq/L	2.29	2.31			0.870	
Dup	Magnesium	0.51		mEq/L	0.51	0.53			3.85	
Dup	Sodium	2.10		mEq/L	2.10	2.14			1.89	
Dup	Sodium Adsorption Ratio	1.77		mEq/L	1.77	1.80			1.68	
AA11874										
MB	Calcium	0.00		mEq/L						
MB	Magnesium	0.01		mEq/L						
MB	Sodium	0.02		mEq/L						
AA11875										
LCS	Calcium	10.53		ppm			105			
LCS	Magnesium	8.42		ppm			84.2			
LCS	Sodium	9.13		ppm			91.3			
AA11876										
LCS	Calcium	504.09		ppm			101			
LCS	Magnesium	513.99		ppm			103			
LCS	Sodium	474.18		ppm			94.8			



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

September 11, 2024

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Mackenzie Smith

Project Name : Marick A-1

Project Number : N/A

Attached are the analytical results for Marick A-1 N/A received by Elevation Diagnostics, Division of Environmental Testing on August 29, 2024. This is associated with Elevation's number AA11621 .

The results were analyzed under the guidelines of various methods. These methods are identified in the report as follows: "SW" is referring to the EPA's SW-846 Compendium; "EPA" is referring to 40 CFR part 136; "HACH" is referring to a method which was validated by HACH®; "SM" is referring to a revision of the Standard Methods For the Examination of Water and Wastewater; and "ASTM" is referring to the standard test method set forth by ASTM International.

The analytical results in this report apply specifically to the samples listed in the attached Chain of Custody. This report may only be duplicated in full.

Any deviations to sample integrity, method specifications, or Elevation Diagnostics's standard operating procedures are documented in the report below.

Please contact us for any questions or comments concerning the content of this report.

Thank you,

Elevation Diagnostics, Division of Environmental Testing

Chain of Custody Form

Client: Central Operating
Address: _____
City/State/ZIP: _____
Phone: _____
Project Contact: Mackenzie Smith
msmith@ardereenvironmental.com

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045
800.440.5184

Project Name: Mapick #1 A-1
Project Location: _____
Collector Name: Bob Jones

Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Notes
					HCl	HNO ₃	None	Other	Water	Soil	Other	Sar	EC	pH	Boron	
1	NPW9 @ 4'	8/28/24	12:34	3						X		X	X	X	X	
2	NPW9 @ 6'		12:37							X		X	X	X	X	HOLD
3	SPW17 @ 4'		12:58							X		X	X	X	X	
4	SPW17 @ 6'		13:03							X		X	X	X	X	HOLD
5	SPW18 @ 4'		13:11							X		X	X	X	X	
6	SPW18 @ 6'		13:15							X		X	X	X	X	HOLD HOLD
7	SPW18 @ 4'		13:35							X		X	X	X	X	
8	SPW19 @ 6'		13:42							X		X	X	X	X	HOLD
9	SPW20 @ 4'		13:54							X		X	X	X	X	
10	SPW20 @ 6'		14:03							X		X	X	X	X	HOLD

Relinquished By: Bob Jones

Date/Time: 8/28/24 18:39

Relinquished By: Pylan Johnson

Date/Time: 18:39 08-28-24

Relinquished By: _____

Date/Time: _____

Lab
Use
Only

Observed Temperature Upon Receipt: 11.2C
Corrected Temperature Upon Receipt: 12.5C
Thermometer #: EDX 238
Correction Factor: +1.3C

Samples Intact: ☒ Yes ☐ No
pH Checked: ☒ Yes ☐ No
pH Adjusted: ☒ Yes ☐ No
Name/Lot Number of Adjustment: _____

2024-08-29-001-1

Scan to
Deliver
Samples



Chain of Custody Form

2022

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045
800.440.5184

Client: Central Operating
Address: _____
City/State/ZIP: _____
Phone: _____
Project Contact: Mackenzie Smith
msmith@cardenvironmental.com

Project Name: Marick A-1
Project Location: _____
Collector Name: Jacob Smith

Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested								Notes
					HCl	HNO ₃	None	Other	Water	Soil	Other	SAH	LC	PH	Baron					
1	SPW21@4'	8/28/24	14:34	3						X		X	X	X	X					
2	SPW21@6'		15:14	1						X		X	X	X	X					HOLD
3	SPW22@4'		15:34	1						X		X	X	X	X					
4	SPW22@6'		15:38	1						X		X	X	X	X					HOLD
5	BG1@4'		15:53	1						X		X	X	X	X					
6	BG1@6'		15:58	1						X		X	X	X	X					HOLD
7	BG2@4'		16:38	1						X		X	X	X	X					
8	BG2@6'		16:40	1						X		X	X	X	X					HOLD
9																				
10																				

Relinquished By: JamesDate/Time: 8/28/24 18:39Relinquished By: Dylan SamsonDate/Time: 18:39 08-28-24

Relinquished By: _____

Date/Time: _____

Scan to
Deliver
Samples

EFOR-008.002

Lab
Use
Only

Observed Temperature Upon Receipt: 11.2°
Corrected Temperature Upon Receipt: 12.5°
Thermometer #: EDx 238
Correction Factor: +1.3°

Samples Intact: Yes No
pH Checked: Yes No
pH Adjusted: Yes No
Name/Lot Number of Adjustment: _____

2024-08-29-001-2



AA11631-1



AA11632-1



AA11633-1



AA11634-1



AA11635-1



AA11636-1



AA11637-1



AA11638-1

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 9/11/2024**Report Time :** 17:56**Project Manager:** Mackenzie Smith**Project Name:** Marick A-1**Project Number:** N/A

Sample ID	Customer ID	Collected	Dilution	Result	Units	MDL	Method Ref.
Analyte Name		Analysis Start					Recovery
AA11621-1	NPW9@4'	Collected : 08/28/2024	12:34				
SAR - Calcium		09/05/2024	10:25	10.00	5.94	mEq/L	EPA 6020B
SAR - Magnesium		09/05/2024	10:25	10.00	1.53	mEq/L	EPA 6020B
SAR - Sodium		09/05/2024	10:25	10.00	3.64	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/05/2024	10:25	10.00	1.88	No Unit	EPA 6020B
Soil Conductivity		09/03/2024	17:18		0.9680	mmhos/cm	0.0005 USDA 60
AA11621-2	NPW9@4'	Collected : 08/28/2024	12:34				
Hot Water Soluble Boron		09/05/2024	09:46		0.28	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		09/03/2024	16:39		21.2	°C	
pH, Soils		09/03/2024	16:39		8.68	SU	0.01 EPA 9045D
AA11622-1	NPW9@6'	Collected : 08/28/2024	12:37				
SAR - Calcium		09/10/2024	16:31	10.00	2.31	mEq/L	EPA 6020B
SAR - Magnesium		09/10/2024	16:31	10.00	0.53	mEq/L	EPA 6020B
SAR - Sodium		09/10/2024	16:31	10.00	2.14	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/10/2024	16:31	10.00	1.80	No Unit	EPA 6020B
Soil Conductivity		09/09/2024	13:03		0.52	mmhos/cm	0.0005 USDA 60
AA11622-2	NPW9@6'	Collected : 08/28/2024	12:37				
Hot Water Soluble Boron		09/09/2024	09:18		0.40	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		09/06/2024	12:51		20.3	°C	
pH, Soils		09/06/2024	12:51		8.81	SU	0.01 EPA 9045D
AA11623-1	SPW17@4'	Collected : 08/28/2024	12:58				
SAR - Calcium		09/05/2024	10:25	10.00	2.99	mEq/L	EPA 6020B
SAR - Magnesium		09/05/2024	10:25	10.00	1.41	mEq/L	EPA 6020B
SAR - Sodium		09/05/2024	10:25	10.00	1.46	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/05/2024	10:25	10.00	0.99	No Unit	EPA 6020B
Soil Conductivity		09/03/2024	17:18		0.6430	mmhos/cm	0.0005 USDA 60
AA11623-2	SPW17@4'	Collected : 08/28/2024	12:58				
Hot Water Soluble Boron		09/05/2024	09:46		0.19	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		09/03/2024	16:39		21.1	°C	
pH, Soils		09/03/2024	16:39		8.70	SU	0.01 EPA 9045D
AA11624-1	SPW17@6'	Collected : 08/28/2024	13:03				
SAR - Calcium		09/10/2024	16:31	10.00	1.60	mEq/L	EPA 6020B
SAR - Magnesium		09/10/2024	16:31	10.00	0.52	mEq/L	EPA 6020B
SAR - Sodium		09/10/2024	16:31	10.00	0.88	mEq/L	EPA 6020B
SAR - Sodium Adsorption Ratio		09/10/2024	16:31	10.00	0.85	No Unit	EPA 6020B
Soil Conductivity		09/09/2024	13:03		0.39	mmhos/cm	0.0005 USDA 60
AA11624-2	SPW17@6'	Collected : 08/28/2024	13:03				
Hot Water Soluble Boron		09/09/2024	09:18		0.23	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		09/06/2024	12:51		20.1	°C	

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 9/11/2024**Report Time :** 17:56**Project Manager:** Mackenzie Smith**Project Name:** Marick A-1**Project Number:** N/A

Sample ID	Customer ID	Collected		Dilution	Result	Units	MDL	Method Ref.
Analyte Name		Analysis Start						Recovery
pH, Soils		09/06/2024	12:51		8.96	SU	0.01	EPA 9045D
AA11625-1	SPW18@4'	Collected : 08/28/2024		13:11				
SAR - Calcium		09/05/2024	10:25	10.00	3.39	mEq/L		EPA 6020B
SAR - Magnesium		09/05/2024	10:25	10.00	1.28	mEq/L		EPA 6020B
SAR - Sodium		09/05/2024	10:25	10.00	0.71	mEq/L		EPA 6020B
SAR - Sodium Adsorption Ratio		09/05/2024	10:25	10.00	0.47	No Unit		EPA 6020B
Soil Conductivity		09/03/2024	17:18		0.5750	mmhos/cm	0.0005	USDA 60
AA11625-2	SPW18@4'	Collected : 08/28/2024		13:11				
Hot Water Soluble Boron		09/05/2024	09:46		0.09	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		09/03/2024	16:39		21	°C		
pH, Soils		09/03/2024	16:39		8.61	SU	0.01	EPA 9045D
AA11626-1	SPW18@6'	Collected : 08/28/2024		13:15				
SAR - Calcium		09/10/2024	16:31	10.00	1.98	mEq/L		EPA 6020B
SAR - Magnesium		09/10/2024	16:31	10.00	0.45	mEq/L		EPA 6020B
SAR - Sodium		09/10/2024	16:31	10.00	0.54	mEq/L		EPA 6020B
SAR - Sodium Adsorption Ratio		09/10/2024	16:31	10.00	0.49	No Unit		EPA 6020B
Soil Conductivity		09/09/2024	13:03		0.34	mmhos/cm	0.0005	USDA 60
AA11626-2	SPW18@6'	Collected : 08/28/2024		13:15				
Hot Water Soluble Boron		09/09/2024	09:18		0.15	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		09/06/2024	12:51		20.2	°C		
pH, Soils		09/06/2024	12:51		8.85	SU	0.01	EPA 9045D
AA11627-1	SPW19@4'	Collected : 08/28/2024		13:35				
SAR - Calcium		09/05/2024	10:25	10.00	1.51	mEq/L		EPA 6020B
SAR - Magnesium		09/05/2024	10:25	10.00	0.52	mEq/L		EPA 6020B
SAR - Sodium		09/05/2024	10:25	10.00	5.54	mEq/L		EPA 6020B
SAR - Sodium Adsorption Ratio		09/05/2024	10:25	10.00	5.50	No Unit		EPA 6020B
Soil Conductivity		09/03/2024	17:18		0.9780	mmhos/cm	0.0005	USDA 60
AA11627-2	SPW19@4'	Collected : 08/28/2024		13:35				
Hot Water Soluble Boron		09/05/2024	09:46		0.61	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		09/03/2024	16:39		22.1	°C		
pH, Soils		09/03/2024	16:39		8.97	SU	0.01	EPA 9045D
AA11628-1	SPW19@6'	Collected : 08/28/2024		13:42				
SAR - Calcium		09/10/2024	16:31	10.00	1.64	mEq/L		EPA 6020B
SAR - Magnesium		09/10/2024	16:31	10.00	0.31	mEq/L		EPA 6020B
SAR - Sodium		09/10/2024	16:31	10.00	7.08	mEq/L		EPA 6020B
SAR - Sodium Adsorption Ratio		09/10/2024	16:31	10.00	7.17	No Unit		EPA 6020B
Soil Conductivity		09/09/2024	13:03		1.27	mmhos/cm	0.0005	USDA 60
AA11628-2	SPW19@6'	Collected : 08/28/2024		13:42				

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 9/11/2024**Report Time :** 17:56**Project Manager:** Mackenzie Smith**Project Name:** Marick A-1**Project Number:** N/A

Sample ID	Customer ID	Collected		Dilution	Result	Units	MDL	Method Ref.
Analyte Name		Analysis Start						Recovery
Hot Water Soluble Boron		09/09/2024	09:18		1.22	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		09/06/2024	12:51		20.2	°C		
pH, Soils		09/06/2024	12:51		9.17	SU	0.01	EPA 9045D

AA11629-1	SPW20@4'	Collected : 08/28/2024 13:59						
SAR - Calcium		09/05/2024	10:25	10.00	1.85	mEq/L		EPA 6020B
SAR - Magnesium		09/05/2024	10:25	10.00	0.20	mEq/L		EPA 6020B
SAR - Sodium		09/05/2024	10:25	10.00	19.70	mEq/L		EPA 6020B
SAR - Sodium Adsorption Ratio		09/05/2024	10:25	10.00	19.45	No Unit		EPA 6020B
Soil Conductivity		09/03/2024	17:18		2.9700	mmhos/cm	0.0005	USDA 60
AA11629-2	SPW20@4'	Collected : 08/28/2024 13:59						
Hot Water Soluble Boron		09/05/2024	09:46		1.27	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		09/03/2024	16:39		21.5	°C		
pH, Soils		09/03/2024	16:39		9.05	SU	0.01	EPA 9045D

AA11630-1	SPW20@6'	Collected : 08/28/2024 14:03						
SAR - Calcium		09/10/2024	16:31	10.00	2.08	mEq/L		EPA 6020B
SAR - Magnesium		09/10/2024	16:31	10.00	0.32	mEq/L		EPA 6020B
SAR - Sodium		09/10/2024	16:31	10.00	16.38	mEq/L		EPA 6020B
SAR - Sodium Adsorption Ratio		09/10/2024	16:31	10.00	14.95	No Unit		EPA 6020B
Soil Conductivity		09/09/2024	13:03		2.94	mmhos/cm	0.0005	USDA 60
AA11630-2	SPW20@6'	Collected : 08/28/2024 14:03						
Hot Water Soluble Boron		09/09/2024	09:18		1.47	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		09/06/2024	12:51		20.3	°C		
pH, Soils		09/06/2024	12:51		9.11	SU	0.01	EPA 9045D



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 9/11/2024

Report Time : 17:56

Project Manager: Mackenzie Smith

Project Name: Marick A-1

Project Number: N/A

QC Report

QC	Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
BORON-4633										
DUP	AA11621	0.30	0.050	mg/kg					6.8966	-15 - 15
MB	AA11766	0.01		mg/kg						
LCS	AA11767	1.05		mg/kg	1.00		105	80 - 120		
LCS	AA11768	9.55		mg/kg	9.00		106	80 - 120		
BORON-4670										
DUP	AA11622	0.37	0.050	mg/kg					7.7922	-15 - 15
MB	AA11834	0.01		mg/kg						
LCS	AA11835	1.11		mg/kg	1.00		111	80 - 120		
LCS	AA11836	10.11		mg/kg	10.00		101	80 - 120		
ECSOIL_MMHOS-4611										
DUP	AA11621	0.933		mmhos/cm					3.6823	
LCS	AA11727	10.29		mmhos/cm	10.00		103			
LCS	AA11728	10.29		mmhos/cm	10.00		103			
ECSOIL_MMHOS-4699										
DUP	AA11622	0.51		mmhos/cm					1.9417	
LCS	AA11853	10.16		mmhos/cm	10.00		102			
LCS	AA11854	10.15		mmhos/cm	10.00		102			
PH_S-4568										
DUP	AA11549	8.25	0.01	S.U.					0.2427184466	-5 - 5
LCS	AA11646	6.87	0.01	S.U.	6.86		100	95 - 105		
LCS	AA11647	6.86	0.01	S.U.	6.86		100	95 - 105		
PH_S-4620										
DUP	AA11627	8.89	0.01	S.U.					0.8958566629	-5 - 5
LCS	AA11744	6.89	0.01	S.U.	6.86		100	95 - 105		
LCS	AA11745	6.88	0.01	S.U.	6.86		100	95 - 105		
PH_S-4664										
DUP	AA11634	8.72	0.01	S.U.					0.8059873344	-5 - 5
LCS	AA11832	6.89	0.01	S.U.	6.86		100	95 - 105		
LCS	AA11833	6.88	0.01	S.U.	6.86		100	95 - 105		



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 9/11/2024

Report Time : 17:56

Project Manager: Mackenzie Smith

Project Name: Marick A-1

Project Number: N/A

QC Report

QC	Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
SAR-4645										
AA11621										
Dup	Calcium	5.92		mEq/L	5.92	5.94			0.337	
Dup	Magnesium	1.54		mEq/L	1.54	1.53			0.651	
Dup	Sodium	3.69		mEq/L	3.69	3.64			1.36	
AA11797										
MB	Calcium	0.00		mEq/L						
MB	Magnesium	0.00		mEq/L						
MB	Sodium	0.02		mEq/L						
AA11798										
LCS	Calcium	9.90		ppm			99.0			
LCS	Magnesium	9.71		ppm			97.1			
LCS	Sodium	9.26		ppm			92.6			
AA11799										
LCS	Calcium	458.43		ppm			91.7			
LCS	Magnesium	447.64		ppm			89.5			
LCS	Sodium	449.71		ppm			89.9			
SAR-4712										
AA11622										
Dup	Calcium	2.29		mEq/L	2.29	2.31			0.870	
Dup	Magnesium	0.51		mEq/L	0.51	0.53			3.85	
Dup	Sodium	2.10		mEq/L	2.10	2.14			1.89	
Dup	Sodium Adsorption Ratio	1.77		mEq/L	1.77	1.80			1.68	
AA11874										
MB	Calcium	0.00		mEq/L						
MB	Magnesium	0.01		mEq/L						
MB	Sodium	0.02		mEq/L						
AA11875										
LCS	Calcium	10.53		ppm			105			
LCS	Magnesium	8.42		ppm			84.2			
LCS	Sodium	9.13		ppm			91.3			
AA11876										
LCS	Calcium	504.09		ppm			101			
LCS	Magnesium	513.99		ppm			103			
LCS	Sodium	474.18		ppm			94.8			



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

July 22, 2024

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-1

Project Number : N/A

Attached are the analytical results for Marick A-1 N/A received by Elevation Diagnostics, Division of Environmental Testing on July 05, 2024. This is associated with Elevation's number AA09721 .

The results were analyzed under the guidelines of various methods. These methods are identified in the report as follows: "SW" is referring to the EPA's SW-846 Compendium; "EPA" is referring to 40 CFR part 136; "HACH" is referring to a method which was validated by HACH®; "SM" is referring to a revision of the Standard Methods For the Examination of Water and Wastewater; and "ASTM" is referring to the standard test method set forth by ASTM International.

The analytical results in this report apply specifically to the samples listed in the attached Chain of Custody. This report may only be duplicated in full.

Any deviations to sample integrity, method specifications, or Elevation Diagnostics's standard operating procedures are documented in the report below.

Please contact us for any questions or comments concerning the content of this report.

Thank you,

Elevation Diagnostics, Division of Environmental Testing

Kristen Reichel
Laboratory Director
CSO,CCO

10F23








Chain of Custody Form

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045
800.440.5184


Client: CENTRAL OPERATING
 Address: _____
 City/State/ZIP: _____
 Phone: 303 915 9074
 Project Contact: RYAN@PEOOPERATING1.COM
MSMITH@AERDOR-ENVIRONMENTAL.COM

Project Name: MARICK A-1
 Project Location: _____
 Collector Name: RYAN DORNBOSS

Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Notes
					HCl	HNO ₃	None	Other	Water	Soil	Other	PH/EC, SAR, BORON	ARSENIC	ELCNC 909J		
1	MARICK PIT	7/5/24	1311	12	X	X	X		X							PLEASE ISSUE SEPARATE REPORT
2	NPW5 4'		1330	2					X			X	X			 
3	NPW6 4'		34	2					X			X	X			
4	NPW7		56	2					X			X	X			 
5	NPW8 4'		38	2					X			X	X			
6	SPW9		40	2					X			X	X			 
7	SPW10		42	2					X			X	X			
8	SPW11 4'		44	2					X			X	X			
9	SPW12 4'		48	2					X			X	X			
10	SPW13 4'		50	2					X			X	X			

Relinquished By: <u>RYAN DORNBOSS</u>	Relinquished By: <u>Dylan Johnson</u>	Relinquished By: _____
Date/Time: <u>7/5/24 9:15</u>	Date/Time: <u>7/5/24 9:16</u>	Date/Time: _____

Lab Use Only	Observed Temperature Upon Receipt: <u>5.6°C</u> <small>soil 14.5°C</small>	Samples Intact: <u>Yes</u>	2024-07-05-005-1
	Corrected Temperature Upon Receipt: <u>6.9°C</u> <small>soil 15.8°C</small>	pH Checked: <u>Yes</u>	
	Thermometer #: <u>FXEQ238</u>	pH Adjusted: <u>Yes</u>	
	Correction Factor: <u>+1.3°C</u>	Name/Lot Number of Adjustment: _____	

Scan to Deliver Samples


EFOR-008.002

2 OF 3

Chain of Custody Form

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045
800.440.5184

Client: CENTRAL OPERATING
 Address: _____
 City/State/ZIP: _____
 Phone: 303 915 9041
 Project Contact: RYAN@PEOPERATING.COM
MSMITH@ARIZONAVIRONMENTAL.COM

Project Name: MARICK A-1
 Project Location: _____
 Collector Name: RYAN DORNBOSS

Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Notes
					HCl	HNO ₃	None	Other	Water	Soil	Other	pH	ELC	SAR	BODEN	
1	SPW 14 4'	7/3/24	1352	2			X			X		X	X	X	X	
2	SPW 15 4'	↓	1354	2			X			X		X	X	X	X	
3	SPW 16 4'	↓	1355	2			X			X		X	X	X	X	
4	SPW NPW 5 6'		1	2			X			X		X	X	X	X	
5	NPW 6 6'		4	2			X			X		X	X	X	X	
6	NPW 8 6'			2			X			X		X	X	X	X	
7	SPW 11 6'			2			X			X		X	X	X	X	
8	SPW 12 6'			2			X			X		X	X	X	X	
9	SPW 13 6'			2			X			X		X	X	X	X	
10	SPW 14 6'			2			X			X		X	X	X	X	

Relinquished By: RYAN DORNBOSSDate/Time: 07/05/24 9:15Relinquished By: Dylan SchusterDate/Time: 07/05/24 9:16

Relinquished By: _____

Date/Time: _____

Scan to
Deliver
Samples

EFOR-008.002

Lab Observed Temperature Upon Receipt: 14.5°C
 Use Corrected Temperature Upon Receipt: 15.8°C
 Only Thermometer #: EDXEQ238
 Correction Factor: +1.3°C

Samples Intact: Yes No
 pH Checked: Yes No
 pH Adjusted: Yes No
 Name/Lot Number of Adjustment: _____

2024-07-05-005-2

3 of 3

Chain of Custody Form


Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045
800.440.5184

Client: CENTRAL OPERATING
 Address: _____
 City/State/ZIP: _____
 Phone: _____
 Project Contact: _____

Project Name: MARICK A1
 Project Location: _____
 Collector Name: RYAN DORNBOSS

Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested										Notes
					HCl	HNO ₃	None	Other	Water	Soil	Other	PH	EC	SAR	BO	AS	SE	NI	CO	CD	Notes	
1	SPW15 SPW15	6'	7/3/24	2	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							HOLD
2	SPW16	6'	7/3/24	2			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							HOLD
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished By: <u>RYAN DORNBOSS</u>	Relinquished By: <u>Dylan Johnson</u>	Relinquished By: _____	Scan to Deliver Samples 
Date/Time: <u>7/5/24 9:15</u>	Date/Time: <u>7/5/24 9:16</u>	Date/Time: _____	
Lab Use Only Observed Temperature Upon Receipt: <u>14.5°C</u> Corrected Temperature Upon Receipt: <u>15.8°C</u> Thermometer #: <u>EDXEQ238</u> Correction Factor: <u>+1.3°C</u>	Samples Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> pH Checked: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> pH Adjusted: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Name/Lot Number of Adjustment: _____	2024-07-05-005-3	

EFOR-008.002

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 7/22/2024**Report Time :** 12:09**Project Manager:** Ryan Dornbos**Project Name:** Marick A-1**Project Number:** N/A

Sample ID	Customer ID	Collected	Dilution	Result	Units	RL	Method Ref.
Analyte Name		Analysis Start					Recovery
AA09721-1	NPW6 6'	Collected : 07/03/2024 13:34					
SAR - Calcium		07/18/2024	11:18 10.00	1.648	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/18/2024	11:18 10.00	0.252	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/18/2024	11:18 10.00	0.391	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/18/2024	11:18 10.00	0.402		0.000	EPA 6020B
Soil Conductivity		07/17/2024	14:30	0.316	mmhos/cm		USDA 60
AA09721-2	NPW6 6'	Collected : 07/03/2024 13:34					
Hot Water Soluble Boron		07/18/2024	09:20	0.153	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/19/2024	13:54	24.3	°C		
pH, Soils		07/19/2024	13:54	8.38	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/19/2024	12:43 10.00	4.690	mg/kg	0.025	EPA 6020B
AA09723-1	SPW11 6'	Collected : 07/03/2024 13:44					
SAR - Calcium		07/18/2024	11:18 10.00	2.162	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/18/2024	11:18 10.00	0.841	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/18/2024	11:18 10.00	1.475	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/18/2024	11:18 10.00	1.204		0.000	EPA 6020B
Soil Conductivity		07/17/2024	14:30	0.849	mmhos/cm		USDA 60
AA09723-2	SPW11 6'	Collected : 07/03/2024 13:44					
Hot Water Soluble Boron		07/18/2024	09:20	0.200	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/19/2024	13:54	20.4	°C		
pH, Soils		07/19/2024	13:54	8.42	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/19/2024	12:43 10.00	5.152	mg/kg	0.025	EPA 6020B
AA09724-1	SPW12 6'	Collected : 07/03/2024 13:46					
SAR - Calcium		07/18/2024	11:18 10.00	1.116	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/18/2024	11:18 10.00	0.268	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/18/2024	11:18 10.00	0.766	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/18/2024	11:18 10.00	0.921		0.000	EPA 6020B
Soil Conductivity		07/17/2024	14:30	0.347	mmhos/cm		USDA 60
AA09724-2	SPW12 6'	Collected : 07/03/2024 13:46					
Hot Water Soluble Boron		07/18/2024	09:20	0.213	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/19/2024	13:54	24.1	°C		
pH, Soils		07/19/2024	13:54	8.59	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/19/2024	12:43 10.00	5.879	mg/kg	0.025	EPA 6020B
AA09725-1	SPW13 6'	Collected : 07/03/2024 13:48					
SAR - Calcium		07/18/2024	11:18 10.00	0.899	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/18/2024	11:18 10.00	0.194	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/18/2024	11:18 10.00	2.033	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/18/2024	11:18 10.00	2.750		0.000	EPA 6020B
Soil Conductivity		07/17/2024	14:30	0.531	mmhos/cm		USDA 60
AA09725-2	SPW13 6'	Collected : 07/03/2024 13:48					
Hot Water Soluble Boron		07/18/2024	09:20	0.560	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/19/2024	13:54	24.4	°C		
pH, Soils		07/19/2024	13:54	8.65	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/19/2024	12:43 10.00	5.118	mg/kg	0.025	EPA 6020B



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 7/22/2024

Report Time : 12:09

Project Manager: Ryan Dornbos

Project Name: Marick A-1

Project Number: N/A

Sample ID	Customer ID	Collected	Dilution	Result	Units	RL	Method Ref.
Analyte Name		Analysis Start					Recovery
AA09726-1	SPW14 6"	Collected : 07/03/2024	13:50				
SAR - Calcium		07/18/2024	11:18	10.00	1.009	mEq/L	0.000 EPA 6020B
SAR - Magnesium		07/18/2024	11:18	10.00	0.082	mEq/L	0.000 EPA 6020B
SAR - Sodium		07/18/2024	11:18	10.00	13.026	mEq/L	0.000 EPA 6020B
SAR - Sodium Adsorption Ratio		07/18/2024	11:18	10.00	17.631		0.000 EPA 6020B
Soil Conductivity		07/17/2024	12:27		2.63	mmhos/cm	USDA 60
AA09726-2	SPW14 6"	Collected : 07/03/2024	13:50				
Hot Water Soluble Boron		07/18/2024	09:20		1.482	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		07/19/2024	13:54		23.7	°C	
pH, Soils		07/19/2024	13:54		8.78	S.U.	0.01 EPA 9045D
Total Metals, Soils - Arsenic		07/19/2024	12:43	10.00	4.495	mg/kg	0.025 EPA 6020B
AA09728-1	SPW16 '6	Collected : 07/03/2024	13:54				
SAR - Calcium		07/18/2024	11:18	10.00	1.512	mEq/L	0.000 EPA 6020B
SAR - Magnesium		07/18/2024	11:18	10.00	0.369	mEq/L	0.000 EPA 6020B
SAR - Sodium		07/18/2024	11:18	10.00	0.193	mEq/L	0.000 EPA 6020B
SAR - Sodium Adsorption Ratio		07/18/2024	11:18	10.00	0.199		0.000 EPA 6020B
Soil Conductivity		07/17/2024	12:27		0.285	mmhos/cm	USDA 60
AA09728-2	SPW16 '6	Collected : 07/03/2024	13:54				
Hot Water Soluble Boron		07/18/2024	09:20		0.130	mg/kg	0.050 Boron Hot Water Extraction
pH, Soils Temperature		07/19/2024	13:54		24	°C	
pH, Soils		07/19/2024	13:54		8.39	S.U.	0.01 EPA 9045D
Total Metals, Soils - Arsenic		07/19/2024	12:43	10.00	5.222	mg/kg	0.025 EPA 6020B

QC Report

BORON-3916		Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result								
DUP AA09721	0.164	0.050	mg/kg		0.153			6.9401	-15 - 15
MB AA10136	0.011		mg/kg						
LCS AA10137	0.866		mg/kg	1.000		86.6	80 - 120		
LCS AA10138	10.298		mg/kg	9.000		114	80 - 120		
ECISOIL_MMHOS-3913		Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result								
DUP AA09721	0.285		mmhos/cm		0.316			10.316	
LCS AA10129	10.58		mmhos/cm	10.00		106			
LCS AA10130	10.68		mmhos/cm	10.00		107			
PH_S-3921		Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result								
DUP AA09721	8.40	0.01	S.U.		8.38			0.2383790226	-5 - 5
LCS AA10141	6.90	0.01	S.U.	6.86		101	95 - 105		
LCS AA10142	6.87	0.01	S.U.	6.86		100	95 - 105		



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 7/22/2024

Report Time : 12:09

Project Manager: Ryan Dornbos

Project Name: Marick A-1

Project Number: N/A

QC Report

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
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METALS_S-3949

AA09721

DUP

Arsenic	4.986	0.025	mg/kg		4.690			6.12	0 - 15
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Matrix Spike

Arsenic	27.711		mg/kg	20	4.690	115			
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AA10177

MB

Arsenic	0.000		mg/kg						
Barium	0.000		mg/kg						
Cadmium	0.000		mg/kg						
Copper	0.000		mg/kg						
Lead	0.000		mg/kg						
Nickel	0.000		mg/kg						
Selenium	0.000		mg/kg						
Silver	0.000		mg/kg						
Zinc	0.004		mg/kg						

AA10179

LCS

Arsenic	0.089		mg/kg			98.9	80 - 120
Barium	0.091		mg/kg			101	80 - 120
Cadmium	0.091		mg/kg			101	80 - 120
Copper	0.090		mg/kg			100	80 - 120
Lead	0.092		mg/kg			102	80 - 120
Nickel	0.092		mg/kg			102	80 - 120
Selenium	0.091		mg/kg			101	80 - 120
Silver	0.099		mg/kg			110	80 - 120
Zinc	0.093		mg/kg			103	80 - 120

AA10180

Arsenic	0.093		mg/kg			103	80 - 120
Barium	0.094		mg/kg			104	80 - 120
Cadmium	0.093		mg/kg			103	80 - 120
Copper	0.094		mg/kg			104	80 - 120
Lead	0.089		mg/kg			98.9	80 - 120
Nickel	0.096		mg/kg			107	80 - 120
Selenium	0.095		mg/kg			106	80 - 120
Silver	0.104		mg/kg			116	80 - 120
Zinc	0.095		mg/kg			106	80 - 120

SAR-3940

AA10171

MB

Calcium	0.026		mEq/L
Magnesium	0.006		mEq/L
Sodium	0.032		mEq/L



Division of Environmental Testing
2115 N Scranton St Suite 3040A
Aurora, CO 80045
800-440-5184

FINAL RESULTS REPORT

Report Date : 7/22/2024
Report Time : 12:09

Project Manager: Ryan Dornbos **Project Name:** Marick A-1 **Project Number:** N/A

QC Report

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
AA10172									
LCS									
Calcium	9.327		ppm			93.3			
Magnesium	8.737		ppm			87.4			
Sodium	8.283		ppm			82.8			
AA10173									
Calcium	374.028		ppm			93.5			
Magnesium	369.894		ppm			92.5			
Sodium	356.549		ppm			89.1			



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

July 13, 2024

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-1

Project Number : N/A

Attached are the analytical results for Marick A-1 N/A received by Elevation Diagnostics, Division of Environmental Testing on July 05, 2024. This is associated with Elevation's number AA09711 .

The results were analyzed under the guidelines of various methods. These methods are identified in the report as follows: "SW" is referring to the EPA's SW-846 Compendium; "EPA" is referring to 40 CFR part 136; "HACH" is referring to a method which was validated by HACH®; "SM" is referring to a revision of the Standard Methods For the Examination of Water and Wastewater; and "ASTM" is referring to the standard test method set forth by ASTM International.

The analytical results in this report apply specifically to the samples listed in the attached Chain of Custody. This report may only be duplicated in full.

Any deviations to sample integrity, method specifications, or Elevation Diagnostics's standard operating procedures are documented in the report below.

Please contact us for any questions or comments concerning the content of this report.

Thank you,

Elevation Diagnostics, Division of Environmental Testing

Kristen Reichel
Laboratory Director
CSO,CCO

10F23










Chain of Custody Form

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045
800.440.5184


Client: CENTRAL OPERATING
 Address: _____
 City/State/ZIP: _____
 Phone: 303 915 9074
 Project Contact: RYAN@PEOOPERATING1.COM
MSMITH@AERDOR-ENVIRONMENTAL.COM

Project Name: MARICK A-1
 Project Location: _____
 Collector Name: RYAN DORNBOSS

Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Notes
					HCl	HNO ₃	None	Other	Water	Soil	Other	PH/EC, SAR, BORON	ARSENIC	ELCNC 909J		
1	MARICK PIT	7/5/24	1311	12	X	X	X		X							PLEASE ISSUE SEPARATE REPORT
2	NPW5 4'		1330	2					X			X	X			
3	NPW6 4'		34	2					X			X	X			
4	NPW7		56	2					X			X	X			
5	NPW8 4'		38	2					X			X	X			
6	SPW9		40	2					X			X	X			
7	SPW10		42	2					X			X	X			
8	SPW11 4'		44	2					X			X	X			
9	SPW12 4'		48	2					X			X	X			
10	SPW13 4'		50	2					X			X	X			

Relinquished By: <u>RYAN DORNBOSS</u>	Relinquished By: <u>Dylan Johnson</u>	Relinquished By: _____
Date/Time: <u>7/5/24 9:15</u>	Date/Time: <u>7/5/24 9:16</u>	Date/Time: _____

Lab Use Only	Observed Temperature Upon Receipt: <u>5.6°C</u> <small>soil 14.5°C</small>	Samples Intact: <u>Yes</u>	2024-07-05-005-1
	Corrected Temperature Upon Receipt: <u>6.9°C</u> <small>soil 15.8°C</small>	pH Checked: <u>Yes</u>	
	Thermometer #: <u>FXEQ238</u>	pH Adjusted: <u>Yes</u>	
	Correction Factor: <u>+1.3°C</u>	Name/Lot Number of Adjustment: _____	

Scan to Deliver Samples


EFOR-008.002

2 OF 3

Chain of Custody Form

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045
800.440.5184

Client: CENTRAL OPERATING
 Address: _____
 City/State/ZIP: _____
 Phone: 303 915 9041
 Project Contact: RYAN@PEOPERATING.COM
MSMITH@ARIZONAVIRONMENTAL.COM

Project Name: MARICK A-1
 Project Location: _____
 Collector Name: RYAN DORNBOSS

Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Notes
					HCl	HNO ₃	None	Other	Water	Soil	Other	pH	ELC	SAR	BODEN	
1	SPW 14 4'	7/3/24	1352	2			X			X		X	X	X	X	
2	SPW 15 4'	↓	1354	2			X			X		X	X	X	X	
3	SPW 16 4'	↓	1355	2			X			X		X	X	X	X	
4	SPW NPW 5 6'		1	2			X			X		X	X	X	X	
5	NPW 6 6'		4	2			X			X		X	X	X	X	
6	NPW 8 6'			2			X			X		X	X	X	X	
7	SPW 11 6'			2			X			X		X	X	X	X	
8	SPW 12 6'			2			X			X		X	X	X	X	
9	SPW 13 6'			2			X			X		X	X	X	X	
10	SPW 14 6'			2			X			X		X	X	X	X	

Relinquished By: RYAN DORNBOSSDate/Time: 07/05/24 9:15Relinquished By: Dylan SchusterDate/Time: 07/05/24 9:16

Relinquished By: _____

Date/Time: _____

Scan to
Deliver
Samples

EFOR-008.002

Lab Observed Temperature Upon Receipt: 14.5°C
 Use Corrected Temperature Upon Receipt: 15.8°C
 Only Thermometer #: EDXEQ238
 Correction Factor: +1.3°C

Samples Intact: Yes No
 pH Checked: Yes No
 pH Adjusted: Yes No
 Name/Lot Number of Adjustment: _____

2024-07-05-005-2

3 of 3

Chain of Custody Form

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045
800.440.5184

Client: CENTRAL OPERATING
 Address: _____
 City/State/ZIP: _____
 Phone: _____
 Project Contact: _____

Project Name: MARICK A1
 Project Location: _____
 Collector Name: RYAN DORNBOSS

Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested								Notes
					HCl	HNO ₃	None	Other	Water	Soil	Other	PH	EC	SAR	BOC	ARSENIC				
1	SPW15 SPW15	6'	7/3/24	2	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						HOLD
2	SPW16	6'	7/3/24	2			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						HOLD
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished By: RYAN DORNBOSSDate/Time: 7/5/24 9:15Relinquished By: Dylan JohnsonDate/Time: 7/5/24 9:16

Relinquished By: _____

Date/Time: _____

Scan to
Deliver
SamplesLab
Use
OnlyObserved Temperature Upon Receipt: 14.5°CCorrected Temperature Upon Receipt: 15.8°CThermometer #: EDXEQ238Correction Factor: +1.3°C

Samples Intact: Yes

No

pH Checked: Yes

NO

pH Adjusted: Yes

NO

Name/Lot Number of Adjustment: _____

2024-07-05-005-3



EFOR-008.002

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

Report Date : 7/13/2024**Report Time :** 13:47**FINAL RESULTS REPORT****Project Manager:** Ryan Dornbos**Project Name:** Marick A-1**Project Number:** N/A

Sample ID	Customer ID	Collected		Dilution	Result	Units	RL	Method Ref.
Analyte Name		Analysis Start						Recovery
AA09711-1	NPW5 4'	Collected : 07/03/2024		13:30				
SAR - Calcium		07/10/2024	11:05	10.00	8.423	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/10/2024	11:05	10.00	1.734	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/10/2024	11:05	10.00	4.250	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/10/2024	11:05	10.00	1.886		0.000	EPA 6020B
Soil Conductivity		07/09/2024	16:53		1.687	mmhos/cm		USDA 60
AA09711-2	NPW5 4'	Collected : 07/03/2024		13:30				
Hot Water Soluble Boron		07/10/2024	14:16		0.307	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/05/2024	16:13		21.4	°C		
pH, Soils		07/05/2024	16:13		7.29	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/11/2024	16:14	10.00	2.509	mg/kg	0.025	EPA 6020B
AA09712-1	NPW6 4'	Collected : 07/03/2024		13:34				
SAR - Calcium		07/10/2024	11:05	10.00	4.185	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/10/2024	11:05	10.00	0.779	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/10/2024	11:05	10.00	0.851	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/10/2024	11:05	10.00	0.540		0.000	EPA 6020B
Soil Conductivity		07/09/2024	16:53		0.618	mmhos/cm		USDA 60
AA09712-2	NPW6 4'	Collected : 07/03/2024		13:34				
Hot Water Soluble Boron		07/10/2024	14:16		0.072	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/05/2024	16:13		21.5	°C		
pH, Soils		07/05/2024	16:13		8.36	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/11/2024	16:14	10.00	2.256	mg/kg	0.025	EPA 6020B
AA09713-1	NPW8 4'	Collected : 07/03/2024		13:38				
SAR - Calcium		07/10/2024	11:05	10.00	3.226	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/10/2024	11:05	10.00	1.288	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/10/2024	11:05	10.00	2.611	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/10/2024	11:05	10.00	1.738		0.000	EPA 6020B
Soil Conductivity		07/09/2024	16:53		9.38	mmhos/cm		USDA 60
AA09713-2	NPW8 4'	Collected : 07/03/2024		13:38				
Hot Water Soluble Boron		07/10/2024	14:16		0.122	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/05/2024	16:13		21.3	°C		
pH, Soils		07/05/2024	16:13		8.27	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/11/2024	16:14	10.00	4.209	mg/kg	0.025	EPA 6020B
AA09714-1	SPW11 4'	Collected : 07/03/2024		13:44				
SAR - Calcium		07/10/2024	11:05	10.00	5.334	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/10/2024	11:05	10.00	0.902	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/10/2024	11:05	10.00	1.734	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/10/2024	11:05	10.00	0.982		0.000	EPA 6020B
Soil Conductivity		07/09/2024	16:53		1.023	mmhos/cm		USDA 60
AA09714-2	SPW11 4'	Collected : 07/03/2024		13:44				
Hot Water Soluble Boron		07/10/2024	14:16		0.194	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/05/2024	16:13		21.3	°C		
pH, Soils		07/05/2024	16:13		8.51	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/11/2024	16:14	10.00	3.674	mg/kg	0.025	EPA 6020B

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

Report Date : 7/13/2024**Report Time :** 13:47**FINAL RESULTS REPORT****Project Manager:** Ryan Dornbos**Project Name:** Marick A-1**Project Number:** N/A

Sample ID	Customer ID	Collected	Dilution	Result	Units	RL	Method Ref.
Analyte Name		Analysis Start					Recovery
AA09715-1	SPW12 4'	Collected : 07/03/2024 13:48					
SAR - Calcium		07/10/2024	11:05 10.00	2.732	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/10/2024	11:05 10.00	1.056	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/10/2024	11:05 10.00	1.417	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/10/2024	11:05 10.00	1.029		0.000	EPA 6020B
Soil Conductivity		07/09/2024	16:53	0.718	mmhos/cm		USDA 60
AA09715-2	SPW12 4'	Collected : 07/03/2024 13:48					
Hot Water Soluble Boron		07/10/2024	14:16	0.147	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/05/2024	16:13	21.3	°C		
pH, Soils		07/05/2024	16:13	8.65	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/11/2024	16:14 10.00	3.436	mg/kg	0.025	EPA 6020B
AA09716-1	SPW13 4'	Collected : 07/03/2024 13:50					
SAR - Calcium		07/10/2024	11:05 10.00	2.435	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/10/2024	11:05 10.00	0.680	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/10/2024	11:05 10.00	2.852	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/10/2024	11:05 10.00	2.286		0.000	EPA 6020B
Soil Conductivity		07/09/2024	16:53	0.694	mmhos/cm		USDA 60
AA09716-2	SPW13 4'	Collected : 07/03/2024 13:50					
Hot Water Soluble Boron		07/10/2024	14:17	0.440	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/05/2024	16:32	21.1	°C		
pH, Soils		07/05/2024	16:32	8.81	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/11/2024	16:14 10.00	3.797	mg/kg	0.025	EPA 6020B
AA09717-1	SPW14 4'	Collected : 07/03/2024 13:52					
SAR - Calcium		07/10/2024	11:40 10.00	2.074	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/10/2024	11:40 10.00	0.225	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/10/2024	11:40 10.00	18.021	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/10/2024	11:40 10.00	16.810		0.000	EPA 6020B
Soil Conductivity		07/09/2024	15:59	3.02	mmhos/cm		USDA 60
AA09717-2	SPW14 4'	Collected : 07/03/2024 13:52					
Hot Water Soluble Boron		07/10/2024	14:17	1.736	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/05/2024	16:32	20.9	°C		
pH, Soils		07/05/2024	16:32	8.95	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/11/2024	16:14 10.00	2.995	mg/kg	0.025	EPA 6020B
AA09718-1	SPW15 4'	Collected : 07/03/2024 13:54					
SAR - Calcium		07/10/2024	11:40 10.00	7.419	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/10/2024	11:40 10.00	1.654	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/10/2024	11:40 10.00	1.636	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/10/2024	11:40 10.00	0.768		0.000	EPA 6020B
Soil Conductivity		07/09/2024	15:59	1.195	mmhos/cm		USDA 60
AA09718-2	SPW15 4'	Collected : 07/03/2024 13:54					
Hot Water Soluble Boron		07/10/2024	14:17	0.187	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/05/2024	16:32	20.9	°C		
pH, Soils		07/05/2024	16:32	8.04	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/11/2024	16:14 10.00	3.384	mg/kg	0.025	EPA 6020B

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

Report Date : 7/13/2024**Report Time :** 13:47**FINAL RESULTS REPORT****Project Manager:** Ryan Dornbos**Project Name:** Marick A-1**Project Number:** N/A

Sample ID	Customer ID	Collected	Dilution	Result	Units	RL	Method Ref.
Analyte Name		Analysis Start					Recovery
AA09719-1	SPW16 4'	Collected : 07/03/2024	13:55				
SAR - Calcium		07/10/2024	11:40 10.00	4.615	mEq/L	0.000	EPA 6020B
SAR - Magnesium		07/10/2024	11:40 10.00	0.697	mEq/L	0.000	EPA 6020B
SAR - Sodium		07/10/2024	11:40 10.00	1.111	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		07/10/2024	11:40 10.00	0.682		0.000	EPA 6020B
Soil Conductivity		07/09/2024	15:59	0.65	mmhos/cm		USDA 60
AA09719-2	SPW16 4'	Collected : 07/03/2024	13:55				
Hot Water Soluble Boron		07/10/2024	14:17	0.117	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		07/05/2024	16:32	20.9	°C		
pH, Soils		07/05/2024	16:32	8.50	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		07/11/2024	16:14 10.00	3.881	mg/kg	0.025	EPA 6020B

QC Report

BORON-3798		Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result								
DUP AA09668	0.082	0.050	mg/kg		0.086			4.7619	-15 - 15
MB AA09800	0.000		mg/kg						
LCS AA09801	1.043		mg/kg	1		104	80 - 120		
LCS AA09802	8.132		mg/kg	9		90.4	80 - 120		
BORON-3799		Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result								
DUP AA09716	0.430	0.050	mg/kg		0.440			2.2989	-15 - 15
MB AA09803	0.020		mg/kg						
LCS AA09804	1.025		mg/kg	1		102	80 - 120		
LCS AA09805	8.362		mg/kg	9		92.9	80 - 120		
ECISOIL_MMHOS-3803		Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result								
DUP AA09712	0.653		mmhos/cm		0.618			5.5075	
LCS AA09808	9.76		mmhos/cm	10		97.6			
LCS AA09809	10.47		mmhos/cm	10		105			
ECISOIL_MMHOS-3804		Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result								
DUP AA09717	2.73		mmhos/cm		3.02			10.087	
LCS AA09811	9.79		mmhos/cm	10.00		97.9			
LCS AA09812	9.85		mmhos/cm	10.00		98.5			
PH_S-3755		Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result								
DUP AA09669	7.33	0.01	S.U.		7.43			1.3550135501	-5 - 5
LCS AA09745	6.87	0.01	S.U.	6.86		100	95 - 105		
LCS AA09746	6.86	0.01	S.U.	6.86		100	95 - 105		
PH_S-3758		Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result								
DUP AA09716	8.91	0.01	S.U.		8.81			1.1286681715	-5 - 5
LCS AA09758	6.88	0.01	S.U.	6.86		100	95 - 105		
LCS AA09759	6.85	0.01	S.U.	6.86		99.9	95 - 105		



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

Report Date : 7/13/2024

Report Time : 13:47

FINAL RESULTS REPORT

Project Manager: Ryan Dornbos

Project Name: Marick A-1

Project Number: N/A

QC Report

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
METALS_S-3764									

AA09668

DUP

Arsenic	6.956	0.025	mg/kg		7.965			13.5	0 - 15
Barium	236.970	0.025	mg/kg		271.646			13.6	0 - 15
Cadmium	0.101	0.001	mg/kg		0.104			2.93	0 - 15
Copper	7.282	0.025	mg/kg		8.228			12.2	0 - 15
Lead	9.351	0.025	mg/kg		10.813			14.5	0 - 15
Nickel	15.464	0.025	mg/kg		17.929			14.8	0 - 15
Selenium	1.681	0.025	mg/kg		1.628			3.20	0 - 15
Silver	<0.250	0.250	mg/kg		<0.250				
Zinc	39.508	0.025	mg/kg		41.949			5.99	0 - 15

Matrix Spike

Arsenic	25.094		mg/kg	20	7.965	85.6
Barium	262.491		mg/kg	20	271.646	<%MDL%
Cadmium	18.936		mg/kg	20	0.104	94.2
Copper	26.393		mg/kg	20	8.228	90.8
Lead	29.320		mg/kg	20	10.813	92.5
Nickel	35.561		mg/kg	20	17.929	88.2
Selenium	17.668		mg/kg	20	1.628	80.2
Silver	18.673		mg/kg	20	<0.250	93.4
Zinc	60.227		mg/kg	20	41.949	91.4

AA09763

MB

Arsenic	0.001	mg/kg
Barium	0.002	mg/kg
Cadmium	0.000	mg/kg
Copper	0.024	mg/kg
Lead	0.001	mg/kg
Nickel	0.001	mg/kg
Selenium	0.005	mg/kg
Silver	0.002	mg/kg
Zinc	0.043	mg/kg

AA09765

LCS

Arsenic	0.084	mg/kg	93.3	80 - 120
Barium	0.089	mg/kg	98.9	80 - 120
Cadmium	0.090	mg/kg	100	80 - 120
Copper	0.086	mg/kg	95.6	80 - 120
Lead	0.088	mg/kg	97.8	80 - 120
Nickel	0.087	mg/kg	96.7	80 - 120
Selenium	0.089	mg/kg	98.9	80 - 120
Silver	0.093	mg/kg	103	80 - 120
Zinc	0.086	mg/kg	95.6	80 - 120

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 7/13/2024**Report Time :** 13:47**Project Manager:** Ryan Dornbos**Project Name:** Marick A-1**Project Number:** N/A**QC Report**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
AA09766									
Arsenic	0.077		mg/kg			85.6	80 - 120		
Barium	0.081		mg/kg			90.0	80 - 120		
Cadmium	0.082		mg/kg			91.1	80 - 120		
Copper	0.077		mg/kg			85.6	80 - 120		
Lead	0.081		mg/kg			90.0	80 - 120		
Nickel	0.078		mg/kg			86.7	80 - 120		
Selenium	0.079		mg/kg			87.8	80 - 120		
Silver	0.083		mg/kg			92.2	80 - 120		
Zinc	0.077		mg/kg			85.6	80 - 120		

SAR-3811**AA09820****MB**

Calcium	0.005	mEq/L
Magnesium	0.002	mEq/L
Sodium	0.026	mEq/L
Sodium Adsorption Ratio	NA	

AA09821**LCS**

Calcium	10.847	ppm	108
Magnesium	9.695	ppm	97.0
Sodium	9.715	ppm	97.2

AA09822

Calcium	446.513	ppm	89.3
Magnesium	455.480	ppm	91.1
Sodium	433.328	ppm	86.7

SAR-3845**AA09884****MB**

Calcium	0.005	mEq/L
Magnesium	0.002	mEq/L
Sodium	0.026	mEq/L
Sodium Adsorption Ratio	NA	

AA09885**LCS**

Calcium	10.847	ppm	108
Magnesium	9.695	ppm	97.0
Sodium	9.715	ppm	97.2

AA09886

Calcium	446.513	ppm	89.3
Magnesium	455.480	ppm	91.1
Sodium	433.328	ppm	86.7

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

June 13, 2024

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-1**Project Number :** N/A

Attached are the analytical results for Marick A-1 N/A received by Elevation Diagnostics, Division of Environmental Testing on May 31, 2024. This is associated with Elevation's number AA08675 .

The results were analyzed under the guidelines of various methods. These methods are identified in the report as follows: "SW" is referring to the EPA's SW-846 Compendium; "EPA" is referring to 40 CFR part 136; "HACH" is referring to a method which was validated by HACH®; "SM" is referring to a revision of the Standard Methods For the Examination of Water and Wastewater; and "ASTM" is referring to the standard test method set forth by ASTM International.

The analytical results in this report apply specifically to the samples listed in the attached Chain of Custody. This report may only be duplicated in full.

Any deviations to sample integrity, method specifications, or Elevation Diagnostics's standard operating procedures are documented in the report below.

Please contact us for any questions or comments concerning the content of this report.

Thank you,

Elevation Diagnostics, Division of Environmental Testing

Kristen Reichel
Laboratory Director
CSO,CCO




Chain of Custody Form

Client: CENTRAL OPERATING
Address: _____
City/State/ZIP: _____
Phone: 303 929 9513
Project Contact: MSMITH@ARDOLENVIRONMENTAL.COM
TFANNING@ARDOLENVIRONMENTAL.COM

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045
800.440.5184

Project Name: MARYK A-1
Project Location: _____
Collector Name: RYAN DORNBOSS

Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested										Notes
					HCl	HNO ₃	None	Other	Water	Soil	Other	ECMC	TAB	EQS								
1	SOUTH PIT F-W	5/30	1330	3			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>										 AA08675-1  AA08676-1  AA08677-1
2	SOUTH PIT F-E	↓	↓	3			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>										
3	NORTH PIT FLOOR	↓	↓	3			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>										
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished By: RYAN DORNBOSS
Date/Time: 5/30/24 1515

Relinquished By: Dylan Samson
Date/Time: 5/30/24 15:21

Relinquished By: _____
Date/Time: _____

Lab Use Only
Observed Temperature Upon Receipt: 29.5°C
Corrected Temperature Upon Receipt: 30.8°C
Thermometer #: EOX EQ 238
Correction Factor: +1.3°C

Samples Intact: ☒ Yes ☒ No
pH Checked: ☒ Yes ☒ No
pH Adjusted: ☒ Yes ☒ No
Name/Lot Number of Adjustment: 2024-05-31-002

Scan to Deliver Samples



EFOR-008.002

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

Report Date : 6/13/2024**Report Time :** 13:01**FINAL RESULTS REPORT****Project Manager:** Ryan Dornbos**Project Name:** Marick A-1**Project Number:** N/A

Sample ID	Customer ID	Collected		Dilution	Result	Units	RL	Method Ref.
Analyte Name		Analysis Start						Recovery
AA08675-1	South Pit F-W	Collected : 05/20/2024		13:30				
SAR - Calcium		06/11/2024	11:29	10.00	1.036	mEq/L	0.000	EPA 6020B
SAR - Magnesium		06/11/2024	11:29	10.00	0.256	mEq/L	0.000	EPA 6020B
SAR - Sodium		06/11/2024	11:29	10.00	47.555	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		06/11/2024	11:29	10.00	59.169		0.000	EPA 6020B
Soil Conductivity		06/03/2024	16:20		5.74	mmhos/cm		USDA 60
AA08675-2	South Pit F-W	Collected : 05/20/2024		13:30				
Chromium VI, Soil		06/05/2024	08:48		<0.0800	mg/kg	0.080	EPA 7199
Hot Water Soluble Boron		06/11/2024	10:07		2.416	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		06/03/2024	15:27		23.2	°C		
pH, Soils		06/03/2024	15:27		8.94	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		06/10/2024	13:30	10.00	3.464	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Barium		06/10/2024	13:30	10.00	167.220 - MS	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Cadmium		06/10/2024	13:30	10.00	0.186	mg/kg	0.001	EPA 6020B
Total Metals, Soils - Copper		06/10/2024	13:30	10.00	10.735	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Lead		06/10/2024	13:30	10.00	10.400	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Nickel		06/10/2024	13:30	10.00	8.178	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Selenium		06/10/2024	13:30	10.00	3.035	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Silver		06/10/2024	13:30	10.00	<0.250 - RL1	mg/kg	0.250	EPA 6020B
Total Metals, Soils - Zinc		06/10/2024	13:30	10.00	38.832 - D1	mg/kg	0.025	EPA 6020B
AA08675-3	South Pit F-W	Collected : 05/20/2024		13:30				
DRO & ORO, Soil - DRO		06/10/2024	10:59		Not Detected	mg/kg	100.00	EPA 8015D
DRO & ORO, Soil - ORO		06/10/2024	10:59		Not Detected	mg/kg	100.00	EPA 8015D
Gasoline Range Organics, Soil		06/07/2024	15:53		Not Detected	mg/kg	0.26827	EPA 8260
SVOC, Soils - 1-methylnaphthalene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - 2-methylnaphthalene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Acenaphthene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Anthracene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benz(a)anthracene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benzo(a)pyrene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benzo(b)fluoranthene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benzo(k)fluoranthene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Chrysene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Dibenzo(a,h)anthracene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Fluoranthene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Fluorene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Indeno(1,2,3-cd)pyrene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Naphthalene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Pyrene		06/13/2024	10:53		Not Detected	mg/kg	0.010	EPA 8270
VOC, Soils - 1,2,4-trimethylbenzene		06/06/2024	13:24		<0.00245	mg/kg	0.00245	EPA 8260d
VOC, Soils - 1,3,5-trimethylbenzene		06/06/2024	13:24		<0.005	mg/kg	0.005	EPA 8260d
VOC, Soils - Benzene		06/06/2024	13:24		Not Detected	mg/kg	0.00242	EPA 8260d
VOC, Soils - Ethylbenzene		06/06/2024	13:24		Not Detected	mg/kg	0.005	EPA 8260d
VOC, Soils - m&p- xylene		06/06/2024	13:24		<0.00427	mg/kg	0.00427	EPA 8260d

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

Report Date : 6/13/2024**Report Time :** 13:01**FINAL RESULTS REPORT****Project Manager:** Ryan Dornbos**Project Name:** Marick A-1**Project Number:** N/A

Sample ID	Customer ID	Collected	Dilution	Result	Units	RL	Method Ref.
Analyte Name		Analysis Start					Recovery
VOC, Soils - o-xylene		06/06/2024	13:24	<0.00227	mg/kg	0.00227	EPA 8260d
VOC, Soils - Toluene		06/06/2024	13:24	Not Detected	mg/kg	0.00263	EPA 8260d
VOC, Soils - Xylenes, total		06/06/2024	13:24	<0.00654	mg/kg	0.00654	EPA 8260d
AA08676-1	South Pit F-E	Collected : 05/20/2024 13:30					
SAR - Calcium		06/11/2024	11:29 10.00	0.642	mEq/L	0.000	EPA 6020B
SAR - Magnesium		06/11/2024	11:29 10.00	0.151	mEq/L	0.000	EPA 6020B
SAR - Sodium		06/11/2024	11:29 10.00	98.055	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		06/11/2024	11:29 10.00	155.741		0.000	EPA 6020B
Soil Conductivity		06/03/2024	16:20	11.16	mmhos/cm		USDA 60
AA08676-2	South Pit F-E	Collected : 05/20/2024 13:30					
Chromium VI, Soil		06/05/2024	08:48	<0.0800	mg/kg	0.080	EPA 7199
Hot Water Soluble Boron		06/11/2024	10:07	4.184	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		06/03/2024	15:27	22.7	°C		
pH, Soils		06/03/2024	15:27	9.22	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		06/10/2024	13:30 10.00	2.558	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Barium		06/10/2024	13:30 10.00	153.379	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Cadmium		06/10/2024	13:30 10.00	0.141	mg/kg	0.001	EPA 6020B
Total Metals, Soils - Copper		06/10/2024	13:30 10.00	10.011	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Lead		06/10/2024	13:30 10.00	7.921	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Nickel		06/10/2024	13:30 10.00	7.674	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Selenium		06/10/2024	13:30 10.00	2.464	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Silver		06/10/2024	13:30 10.00	<0.250 - RL1	mg/kg	0.250	EPA 6020B
Total Metals, Soils - Zinc		06/10/2024	13:30 10.00	30.655	mg/kg	0.025	EPA 6020B
AA08676-3	South Pit F-E	Collected : 05/20/2024 13:30					
DRO & ORO, Soil - DRO		06/10/2024	10:59	Not Detected	mg/kg	100.00	EPA 8015D
DRO & ORO, Soil - ORO		06/10/2024	10:59	Not Detected	mg/kg	100.00	EPA 8015D
Gasoline Range Organics, Soil		06/07/2024	15:53	<0.26827	mg/kg	0.26827	EPA 8260
SVOC, Soils - 1-methylnaphthalene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - 2-methylnaphthalene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Acenaphthene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Anthracene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benz(a)anthracene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benzo(a)pyrene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benzo(b)fluoranthene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benzo(k)fluoranthene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Chrysene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Dibenzo(a,h)anthracene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Fluoranthene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Fluorene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Indeno(1,2,3-cd)pyrene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Naphthalene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Pyrene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
VOC, Soils - 1,2,4-trimethylbenzene		06/06/2024	13:24	<0.00245	mg/kg	0.00245	EPA 8260d
VOC, Soils - 1,3,5-trimethylbenzene		06/06/2024	13:24	<0.005	mg/kg	0.005	EPA 8260d

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

Report Date : 6/13/2024**Report Time :** 13:01**FINAL RESULTS REPORT****Project Manager:** Ryan Dornbos**Project Name:** Marick A-1**Project Number:** N/A

Sample ID	Customer ID	Collected	Dilution	Result	Units	RL	Method Ref.
Analyte Name		Analysis Start					Recovery
VOC, Soils - Benzene		06/06/2024	13:24	Not Detected	mg/kg	0.00242	EPA 8260d
VOC, Soils - Ethylbenzene		06/06/2024	13:24	Not Detected	mg/kg	0.005	EPA 8260d
VOC, Soils - m&p- xylene		06/06/2024	13:24	<0.00427	mg/kg	0.00427	EPA 8260d
VOC, Soils - o-xylene		06/06/2024	13:24	Not Detected	mg/kg	0.00227	EPA 8260d
VOC, Soils - Toluene		06/06/2024	13:24	Not Detected	mg/kg	0.00263	EPA 8260d
VOC, Soils - Xylenes, total		06/06/2024	13:24	<0.00654	mg/kg	0.00654	EPA 8260d
AA08677-1	North Pit Floor	Collected : 05/20/2024 13:30					
SAR - Calcium		06/11/2024	11:29 10.00	0.531	mEq/L	0.000	EPA 6020B
SAR - Magnesium		06/11/2024	11:29 10.00	0.146	mEq/L	0.000	EPA 6020B
SAR - Sodium		06/11/2024	11:29 10.00	13.111	mEq/L	0.000	EPA 6020B
SAR - Sodium Adsorption Ratio		06/11/2024	11:29 10.00	22.542		0.000	EPA 6020B
Soil Conductivity		06/03/2024	16:20	1.378	mmhos/cm		USDA 60
AA08677-2	North Pit Floor	Collected : 05/20/2024 13:30					
Chromium VI, Soil		06/05/2024	08:48	<0.0800	mg/kg	0.080	EPA 7199
Hot Water Soluble Boron		06/11/2024	10:07	1.086	mg/kg	0.050	Boron Hot Water Extraction
pH, Soils Temperature		06/05/2024	07:45	22.2	°C		
pH, Soils		06/05/2024	07:45	8.86	S.U.	0.01	EPA 9045D
Total Metals, Soils - Arsenic		06/10/2024	13:30 10.00	2.077	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Barium		06/10/2024	13:30 10.00	220.520	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Cadmium		06/10/2024	13:30 10.00	0.151	mg/kg	0.001	EPA 6020B
Total Metals, Soils - Copper		06/10/2024	13:30 10.00	10.480	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Lead		06/10/2024	13:30 10.00	10.058	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Nickel		06/10/2024	13:30 10.00	7.949	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Selenium		06/10/2024	13:30 10.00	2.826	mg/kg	0.025	EPA 6020B
Total Metals, Soils - Silver		06/10/2024	13:30 10.00	<0.250 - RL 1	mg/kg	0.250	EPA 6020B
Total Metals, Soils - Zinc		06/10/2024	13:30 10.00	30.094	mg/kg	0.025	EPA 6020B
AA08677-3	North Pit Floor	Collected : 05/20/2024 13:30					
DRO & ORO, Soil - DRO		06/10/2024	10:59	Not Detected	mg/kg	100.00	EPA 8015D
DRO & ORO, Soil - ORO		06/10/2024	10:59	Not Detected	mg/kg	100.00	EPA 8015D
Gasoline Range Organics, Soil		06/07/2024	15:53	0.718	mg/kg	0.26827	EPA 8260
SVOC, Soils - 1-methylnaphthalene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - 2-methylnaphthalene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Acenaphthene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Anthracene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benz(a)anthracene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benzo(a)pyrene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benzo(b)fluoranthene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Benzo(k)fluoranthene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Chrysene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Dibenzo(a,h)anthracene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Fluoranthene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Fluorene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Indeno(1,2,3-cd)pyrene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
SVOC, Soils - Naphthalene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

Report Date : 6/13/2024

Report Time : 13:01

FINAL RESULTS REPORT

Project Manager: Ryan Dornbos

Project Name: Marick A-1

Project Number: N/A

Sample ID	Customer ID	Collected	Dilution	Result	Units	RL	Method Ref.
Analyte Name		Analysis Start					Recovery
SVOC, Soils - Pyrene		06/13/2024	10:53	Not Detected	mg/kg	0.010	EPA 8270
VOC, Soils - 1,2,4-trimethylbenzene		06/06/2024	13:24	Not Detected	mg/kg	0.00245	EPA 8260d
VOC, Soils - 1,3,5-trimethylbenzene		06/06/2024	13:24	Not Detected	mg/kg	0.005	EPA 8260d
VOC, Soils - Benzene		06/06/2024	13:24	Not Detected	mg/kg	0.00242	EPA 8260d
VOC, Soils - Ethylbenzene		06/06/2024	13:24	Not Detected	mg/kg	0.005	EPA 8260d
VOC, Soils - m&p- xylene		06/06/2024	13:24	<0.00427	mg/kg	0.00427	EPA 8260d
VOC, Soils - o-xylene		06/06/2024	13:24	Not Detected	mg/kg	0.00227	EPA 8260d
VOC, Soils - Toluene		06/06/2024	13:24	Not Detected	mg/kg	0.00263	EPA 8260d
VOC, Soils - Xylenes, total		06/06/2024	13:24	<0.00654	mg/kg	0.00654	EPA 8260d

QC Report

BORON-3261			Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result									
DUP AA08678	1.430		0.050	mg/kg		1.481			3.5040	-15 - 15
MB AA08721	0.011			mg/kg						
LCS AA08722	0.864			mg/kg	1.000		86.4	80 - 120		
LCS AA08723	10.027			mg/kg	9.000		111	80 - 120		

CHROM_VI_SOIL-3242			Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result									
DUP AA08642	<0.0800		0.080	mg/kg		<0.0800				
MB AA08659	<0.0800			mg/kg						
LCS AA08661	0.0407			mg/kg	0.0400		102			
LCS AA08662	0.0402			mg/kg	0.0400		100			

ECISOIL_MMHOS-3266			Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result									
DUP AA08650	0.379			mmhos/cm		0.404			6.3857	
LCS AA08736	9.63			mmhos/cm	10.000		96.3			
LCS AA08737	9.69			mmhos/cm	10.000		96.9			

GRO_SOIL-3350			Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result									
DUP AA08764	0.367		0.26827	mg/kg		<0.26827			7.0959	
Matrix Spike AA08764	0.394			mg/kg	2.150	<0.26827	18.3			
MB AA08909	Not Detected			mg/kg						
LCS AA08910	1.834			mg/kg	2.150		85.3			
LCS AA08911	1.741			mg/kg	2.150		81.0			

PH_S-3267			Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result									
DUP AA08647	8.45		0.01	S.U.		8.45			<%MDL%	-5 - 5
LCS AA08739	6.89		0.01	S.U.	6.86		100	95 - 105		
LCS AA08740	6.94		0.01	S.U.	6.86		101	95 - 105		

PH_S-3271			Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Analyte	Result									
DUP AA08677	8.67		0.01	S.U.		8.86			2.1677124928	-5 - 5
LCS AA08753	6.82		0.01	S.U.	6.86		99.4	95 - 105		
LCS AA08754	6.93		0.01	S.U.	6.86		101	95 - 105		

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 6/13/2024**Report Time :** 13:01**Project Manager:** Ryan Dornbos**Project Name:** Marick A-1**Project Number:** N/A**QC Report**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
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DRO_ORO_SOIL-3291**AA08764****DUP**

DRO	289.698				Not Detected			0.692	
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ORO	468.408				Not Detected			8.34	
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Matrix Spike

DRO	291.711		mg/kg	350	Not Detected	83.3			
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ORO	430.909		mg/kg	350	Not Detected	123			
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AA08807**MB**

DRO	Not Detected		mg/kg						
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ORO	Not Detected		mg/kg						
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AA08808**LCS**

DRO	343.43		mg/kg			98.1			
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ORO	194.69		mg/kg			55.6			
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AA08809

DRO	312.794		mg/kg			89.4			
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ORO	256.535		mg/kg			73.3			
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METALS_S-3263**AA08728****MB**

Arsenic	0.000		mg/kg						
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Barium	0.000		mg/kg						
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Cadmium	0.000		mg/kg						
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Copper	0.001		mg/kg						
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Lead	0.000		mg/kg						
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Nickel	0.000		mg/kg						
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Selenium	0.000		mg/kg						
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Silver	0.000		mg/kg						
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Zinc	0.015		mg/kg						
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AA08730**LCS**

Arsenic	0.087		mg/kg			96.7	80 - 120		
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Barium	0.091		mg/kg			101	80 - 120		
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Cadmium	0.091		mg/kg			101	80 - 120		
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Copper	0.096		mg/kg			107	80 - 120		
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Lead	0.091		mg/kg			101	80 - 120		
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Nickel	0.089		mg/kg			98.9	80 - 120		
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Selenium	0.090		mg/kg			100	80 - 120		
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Silver	0.093		mg/kg			103	80 - 120		
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Zinc	0.090		mg/kg			100	80 - 120		
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AA08731

Arsenic	0.087		mg/kg			96.7	80 - 120		
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**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 6/13/2024**Report Time :** 13:01**Project Manager:** Ryan Dornbos**Project Name:** Marick A-1**Project Number:** N/A**QC Report**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
Barium	0.092		mg/kg			102	80 - 120		
Cadmium	0.091		mg/kg			101	80 - 120		
Copper	0.096		mg/kg			107	80 - 120		
Lead	0.091		mg/kg			101	80 - 120		
Nickel	0.090		mg/kg			100	80 - 120		
Selenium	0.090		mg/kg			100	80 - 120		
Silver	0.095		mg/kg			106	80 - 120		
Zinc	0.090		mg/kg			100	80 - 120		

SAR-3394**AA08963****MB**

Calcium	0.003		mEq/L
Magnesium	0.005		mEq/L
Sodium	0.030		mEq/L

AA08964**LCS**

Calcium	11.866		ppm	119
Magnesium	9.772		ppm	97.7
Sodium	9.298		ppm	93.0

AA08965

Calcium	459.869		ppm	92.0
Magnesium	421.655		ppm	84.3
Sodium	427.014		ppm	85.4

SVOC_SOIL-3358**AA08922****MB**

1-methylnaphthalene	Not Detected		mg/kg
2-methylnaphthalene	Not Detected		mg/kg
Acenaphthene	Not Detected		mg/kg
Anthracene	Not Detected		mg/kg
Benz(a)anthracene	Not Detected		mg/kg
Benzo(a)pyrene	Not Detected		mg/kg
Benzo(b)fluoranthene	Not Detected		mg/kg
Benzo(k)fluoranthene	Not Detected		mg/kg
Chrysene	Not Detected		mg/kg
Dibenzo(a,h)anthracene	Not Detected		mg/kg
Fluoranthene	Not Detected		mg/kg
Fluorene	Not Detected		mg/kg
Indeno(1,2,3-cd)pyrene	Not Detected		mg/kg
Naphthalene	Not Detected		mg/kg
Pyrene	Not Detected		mg/kg

AA08923**LCS**

1-methylnaphthalene	0.2109		mg/kg	70.3
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**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 6/13/2024**Report Time :** 13:01**Project Manager:** Ryan Dornbos**Project Name:** Marick A-1**Project Number:** N/A**QC Report**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
2-methylnaphthalene	0.2101		mg/kg			70.0			
Acenaphthene	0.2173		mg/kg			72.4			
Anthracene	0.2891		mg/kg			96.4			
Benz(a)anthracene	0.2469		mg/kg			82.3			
Benzo(a)pyrene	0.2237		mg/kg			74.6			
Benzo(b)fluoranthene	0.2109		mg/kg			70.3			
Benzo(k)fluoranthene	0.3860		mg/kg			129			
Chrysene	0.3216		mg/kg			107			
Dibenzo(a,h)anthracene	0.2153		mg/kg			71.8			
Fluoranthene	0.3814		mg/kg			127			
Fluorene	0.2190		mg/kg			73.0			
Indeno(1,2,3-cd)pyrene	0.2586		mg/kg			86.2			
Naphthalene	0.2101		mg/kg			70.0			
Pyrene	0.3583		mg/kg			119			

AA08924

1-methylnaphthalene	0.2355		mg/kg			78.5			
2-methylnaphthalene	0.2134		mg/kg			71.1			
Acenaphthene	0.2323		mg/kg			77.4			
Anthracene	0.3204		mg/kg			107			
Benz(a)anthracene	0.3097		mg/kg			103			
Benzo(a)pyrene	0.3692		mg/kg			123			
Benzo(b)fluoranthene	0.3310		mg/kg			110			
Benzo(k)fluoranthene	0.3752		mg/kg			125			
Chrysene	0.3849		mg/kg			128			
Dibenzo(a,h)anthracene	0.3880		mg/kg			129			
Fluoranthene	0.3447		mg/kg			115			
Fluorene	0.2594		mg/kg			86.5			
Indeno(1,2,3-cd)pyrene	0.3755		mg/kg			125			
Naphthalene	0.26081		mg/kg			86.9			
Pyrene	0.3755		mg/kg			125			

VOC_S-3321**AA08838****MB**

1,2,4-trimethylbenzene	<0.00245	mg/kg
1,3,5-trimethylbenzene	<0.005	mg/kg
Benzene	Not Detected	mg/kg
Ethylbenzene	<0.005	mg/kg
m&p- xylene	<0.00427	mg/kg
Naphthalene	Not Detected	mg/kg
o-xylene	<0.00227	mg/kg
Toluene	Not Detected	mg/kg
Xylenes, total	<0.00654	mg/kg

AA08839**LCS**



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 6/13/2024

Report Time : 13:01

Project Manager: Ryan Dornbos

Project Name: Marick A-1

Project Number: N/A

QC Report

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
1,2,4-trimethylbenzene	0.048		mg/kg			96.0			
1,3,5-trimethylbenzene	0.059		mg/kg			118			
Benzene	0.052		mg/kg			104			
Ethylbenzene	0.060		mg/kg			120			
m&p- xylene	0.104		mg/kg			104			
o-xylene	0.059		mg/kg			118			
Toluene	0.053		mg/kg			106			
Xylenes, total	0.163		mg/kg			109			

AA08840

1,2,4-trimethylbenzene	0.042		mg/kg			84.0			
1,3,5-trimethylbenzene	0.057		mg/kg			114			
Benzene	0.056		mg/kg			112			
Ethylbenzene	0.060		mg/kg			120			
m&p- xylene	0.102		mg/kg			102			
o-xylene	0.056		mg/kg			112			
Toluene	0.053		mg/kg			106			
Xylenes, total	0.158		mg/kg			105			

Qualifier

Explanation

H1	Sample received outside of regulatory holding time.
H2	Sample analyzed outside of regulatory holding time due to a laboratory error.
P1	Sample received outside temperature requirements, 0-6°C.
P2	Sample received unpreserved.
P3	Broken or leaking sample container.
P4	Sample improperly collected
P5	Sample incorrectly preserved
B1	Blank failed high, indicating possible high bias in sample results.
B2	Blank failed low, indicating possible low bias in sample results.
MS	Matrix Spike / Matrix Spike Duplicate recovery and/or RPD limit exceeded, indicating potential matrix interference.
D1	Duplicate RPD limit exceeded due to low sample concentration.
D2	Duplicate RPD limit exceeded due to matrix interference.
S	Surrogate recovery failed, indicating potential matrix interference.
RL1	Reporting limits raised due to matrix interference.
RL2	Reporting limits raised due to limited sample.
U	Sample result less than method detection limit.
J	Sample result less than reporting limit but higher than method detection limit.
E	Electronic loss or corruption of data.
I	Subcontracted sample



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

March 12, 2024

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303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Attached are the analytical results for Marick A-Z 32117 received by Elevation Diagnostics, Division of Environmental Testing on March 05, 2024. This is associated with Elevation's number AA06345 .

The results were analyzed under the guidelines of various methods. These methods are identified in the report as follows: "SW" is referring to the EPA's SW-846 Compendium; "EPA" is referring to 40 CFR part 136; "HACH" is referring to a method which was validated by HACH®; "SM" is referring to a revision of the Standard Methods For the Examination of Water and Wastewater; and "ASTM" is referring to the standard test method set forth by ASTM International.

The analytical results in this report apply specifically to the samples listed in the attached Chain of Custody. This report may only be duplicated in full.

Any deviations to sample integrity, method specifications, or Elevation Diagnostics's standard operating procedures are documented in the report below.

Please contact us for any questions or comments concerning the content of this report.

Thank you,

Elevation Diagnostics, Division of Environmental Testing

Kristen Reichel
Laboratory Director
CSO,CCO

Chain of Custody Form

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045

800.440.5184

Client: CENTRAL OPERATING, INC.

Address: 1600 BROADWAY STE 1050

City/State/ZIP: DENVER, CO 80202

Phone: 303 929 9513

Project Contact: COI DENVERPRODUCTION@GMAIL.COM


TEANNING@ALDOZ ENVIRONMENTAL.COM

Project Name: MARICK A-Z #32117

Project Location:

Collector Name: RYAN DORNBOOS

RYAN@PEOPERATING.COM				Preservative				Matrix				Analysis Requested				Notes	
Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO ₃	None	Other	Water	Soil	Other	EC	MC	TABLE			
1	EAST TANK	3/4/24	0945	3			X			X		X					
2	CENTER TANK		0950									X					
3	WEST TANK		0955									X					
4	N PIT N WALL		1000									X					
5	N PIT E WALL		1005									X					
6	N PIT S WALL		1010									X					
7	N PIT W WALL		1015									X					
8	S PIT N WALL W		1020									X					
9	S PIT N WALL E		1025									X					
10	S PIT E WALL N		1030									X					

Relinquished By: <u>Ryan Downes</u>	Relinquished By: <u>Dylan Schen</u>	Relinquished By:	Scan to Deliver Samples
Date/Time: <u>3/4/24 5:10 PM</u>	Date/Time: <u>3/4/24 5:12</u>	Date/Time:	
Lab Use Only	Observed Temperature Upon Receipt: <u>11.3°C</u> <u>1</u>	Samples Intact: <u>Yes</u> <u>No</u>	2024-03-05-003-1 
	Corrected Temperature Upon Receipt: <u>13.3°C</u> <u>35.24</u>	pH Checked: <u>Yes</u> <u>No</u>	
	Thermometer #: <u>EDXEQ238</u>	pH Adjusted: <u>Yes</u> <u>No</u>	
Correction Factor: <u>+2°C</u>		Name/Lot Number of Adjustment: _____	

EFOR-008.002

① temp. was not taken upon receipt. samples had previously been stored at room temp until we received at the lab, where they were put into ~~4°C~~^{4°C ± 0.2°C} refrigeration
sat 3.5. 2024

2 of 2

Chain of Custody Form

Elevation Diagnostics

2115 North Scranton Street Suite 3040A Aurora, CO 80045

800.440.5184

Client: CENTRAL OPERATING, INC
 Address: 1600 BROADWAY STE 1050
 City/State/ZIP: DENVER, CO 80202
 Phone: 303 929 9513
 Project Contact: COI.DENVERPRODUCTION@GMAIL.COM
TEANNING@ARDORE ENVIRONMENTAL.COM

Project Name: MAPICK A-Z #32117
 Project Location: CR 17 & EE. N IM, WINTO
 Collector Name: RYAN DORNBOS

RYAN@PEOPERATING.COM				Preservative		Matrix		Analysis Requested				Notes			
Sample ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO ₃	None	Other	Water	Soil	Other	ECM TABLE 915 PH, EC, BORON, SAE 915 METALS			
1	S PIT E WALL S	3/4/24	1035	3		X			X	X					
2	S PIT S WALL E		1040								X				
3	S PIT S WALL W		1045								X				
4	S PIT W WALL S		1050								X				
5	S PIT W WALL N		1055								X				
6	BACKGROUND 1		1100									X	X		
7	BACKGROUND 2	↓	1105	↓		↓			↓			X	X		
8															
9															
10															

Relinquished By: RYAN DORNBOSDate/Time: 3/4/24 5:10 PMRelinquished By: Dylan JohnsonDate/Time: 3/4/24 5:17

Relinquished By:

Date/Time:

Scan to
Deliver
SamplesLab
Use
OnlyObserved Temperature Upon Receipt: 11.3°CCorrected Temperature Upon Receipt: 13.3°CThermometer #: EDXEQ238Correction Factor: +2°C

Samples Intact:

pH Checked:

pH Adjusted:

Name/Lot Number of Adjustment:

Yes No

Yes No

Yes No

2024-03-05-003-2



Temp. was not taken upon receipt. Samples had
 previously been stored at room temp. until received
 at the lab, where they were put into refrigeration
 on 3.5.2024

EFOR-008.002



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 3/12/2024

Report Time : 21:16

REPORT TO

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
-----------	-------------	--------------------------------	----------	--------	-------	--------------------	---------------------

AA06345-1 East Tank

Collected : 03/04/2024 09:45

SAR - Calcium

03/12/2024 13:22 10.00 9.137 mEq/L 0.000 EPA 3050B

SAR - Magnesium

03/12/2024 13:22 10.00 1.894 mEq/L 0.000 EPA 3050B

SAR - Sodium

03/12/2024 13:22 10.00 3.780 mEq/L 0.000 EPA 3050B

SAR - Sodium Adsorption Ratio

03/12/2024 13:22 10.00 1.609 0.000 EPA 3050B

Soil Conductivity

03/12/2024 09:06 1.792 nmhos/cm USDA 60

AA06345-2 East Tank

Collected : 03/04/2024 09:45

Total Metals, Soils - Cadmium

03/12/2024 03:28 10.00 0.187 mg/kg 0.001 EPA 3050B

Total Metals, Soils - Barium

03/12/2024 03:28 10.00 148.533 - MS mg/kg 0.025 EPA 3050B

Total Metals, Soils - Silver

03/12/2024 03:28 10.00 <0.250 - RL1 mg/kg 0.250 EPA 3050B

Total Metals, Soils - Selenium

03/12/2024 03:28 10.00 2.192 mg/kg 0.025 EPA 3050B

Total Metals, Soils - Arsenic

03/12/2024 03:28 10.00 4.311 mg/kg 0.025 EPA 3050B

Total Metals, Soils - Copper

03/12/2024 03:28 10.00 9.023 mg/kg 0.025 EPA 3050B

Total Metals, Soils - Nickel

03/12/2024 03:28 10.00 9.258 mg/kg 0.025 EPA 3050B

**Division of Environmental Testing**

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Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 3/12/2024**Report Time :** 21:16**REPORT TO**

1600 Broadway Ste 1050

Denver, CO 80202

303-929-9513

ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Total Metals, Soils - Lead							
03/12/2024	03:28	10.00		10.382	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Zinc							
03/12/2024	03:28	10.00		35.884 - MS	mg/kg	0.025	EPA 3050B
Hot Water Soluble Boron							
03/07/2024	09:55			1.829	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
03/08/2024	10:16			<0.080	mg/kg	0.080	EPA 3060A & EPA 7199
pH, Soils							
03/07/2024	13:44			7.97	S.U.	0.01	EPA 9045D
pH, Soils Temperature							
03/07/2024	13:44			22.2	°C		
AA06345-3 East Tank							
Collected : 03/04/2024 09:45							
DRO & ORO, Soil - ORO							
03/12/2024	16:54			Not Detected	mg/kg	100.00	EPA 8015D
DRO & ORO, Soil - DRO							
03/12/2024	16:54			Not Detected	mg/kg	100.00	EPA 8015D
SVOC, Soils - Benzo(k)fluoranthene							
03/11/2024	15:45			Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - 1-methylnaphthalene							
03/11/2024	15:45			Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - Pyrene							
03/11/2024	15:45			Not Detected	mg/kg	0.01	EPA 8270
SVOC, Soils - 2-methylnaphthalene							
03/11/2024	15:45			Not Detected	mg/kg	0.003	EPA 8270
SVOC, Soils - Indeno(1,2,3-cd)pyrene							
03/11/2024	15:45			Not Detected	mg/kg	0.00455	EPA 8270

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 3/12/2024**Report Time :** 21:16**REPORT TO**

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergryoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Fluorene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Dibenzo(a,h)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Chrysene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(a)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		VOC, Soils - Toluene					
		03/12/2024 00:00		0.00270	mg/kg	0.00263	EPA 8260
		VOC, Soils - Benzene					
		03/12/2024 00:00		<0.00242	mg/kg	0.00242	EPA 8260
		VOC, Soils - Ethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260

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1600 Broadway Ste 1050

Denver, CO 80202

303-929-9513

ryan@petersonenergryoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
VOC, Soils - m&p- xylene							
		03/12/2024 00:00		0.00451	mg/kg	0.00427	EPA 8260
VOC, Soils - Xylenes, total							
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
VOC, Soils - 1,3,5-trimethylbenzene							
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
VOC, Soils - 1,2,4-trimethylbenzene							
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260
VOC, Soils - o-xylene							
		03/12/2024 00:00		<0.00227	mg/kg	0.00227	EPA 8260
Gasoline Range Organics, Soil							
		03/12/2024 09:43		<0.26827	mg/kg	0.26827	EPA 8260
AA06346-1 Center Tank							
Collected : 03/04/2024 09:50							
SAR - Magnesium							
		03/12/2024 13:22	10.00	0.724	mEq/L	0.000	EPA 3050B
SAR - Sodium							
		03/12/2024 13:22	10.00	0.396	mEq/L	0.000	EPA 3050B
SAR - Calcium							
		03/12/2024 13:22	10.00	2.168	mEq/L	0.000	EPA 3050B
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22	10.00	0.330		0.000	EPA 3050B
Soil Conductivity							
		03/12/2024 09:06		0.525	nmhos/cn		USDA 60
AA06346-2 Center Tank							
Collected : 03/04/2024 09:50							
Total Metals, Soils - Selenium							
		03/12/2024 03:48	10.00	3.743	mg/kg	0.025	EPA 3050B

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1600 Broadway Ste 1050

Denver, CO 80202

303-929-9513

ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Total Metals, Soils - Lead							
03/12/2024	03:48	10.00		14.640	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Barium							
03/12/2024	03:48	10.00		209.657	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Cadmium							
03/12/2024	03:48	10.00		0.260	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Silver							
03/12/2024	03:48	10.00		<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Zinc							
03/12/2024	03:48	10.00		53.431	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
03/12/2024	03:48	10.00		13.755	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
03/12/2024	03:48	10.00		15.137	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Arsenic							
03/12/2024	03:48	10.00		6.474	mg/kg	0.025	EPA 3050B
Hot Water Soluble Boron							
03/07/2024	09:55			1.056	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
03/08/2024	10:16			0.119	mg/kg	0.080	EPA 3060A & EPA 7199
pH, Soils							
03/07/2024	13:44			8.15	S.U.	0.01	EPA 9045D
pH, Soils Temperature							
03/07/2024	13:44			22.3	°C		
AA06346-3 Center Tank							
Collected : 03/04/2024 09:50							
DRO & ORO, Soil - ORO							
03/12/2024	16:54			Not Detected	mg/kg	100.00	EPA 8015D

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ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		DRO & ORO, Soil - DRO					
		03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
		SVOC, Soils - Chrysene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(k)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - 2-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
		SVOC, Soils - 1-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Indeno(1,2,3-cd)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
		SVOC, Soils - Fluorene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Dibenzo(a,h)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(a)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270

**Division of Environmental Testing**

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Denver, CO 80202
303-929-9513
ryan@petersonenergryoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
SVOC, Soils - Anthracene							
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
SVOC, Soils - Fluoranthene							
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
SVOC, Soils - Acenaphthene							
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
VOC, Soils - Toluene							
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
VOC, Soils - Benzene							
		03/12/2024 00:00		<0.00242	mg/kg	0.00242	EPA 8260
VOC, Soils - Ethylbenzene							
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
VOC, Soils - m&p- xylene							
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260
VOC, Soils - Xylenes, total							
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
VOC, Soils - 1,2,4-trimethylbenzene							
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260
VOC, Soils - 1,3,5-trimethylbenzene							
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
VOC, Soils - o-xylene							
		03/12/2024 00:00		<0.00227	mg/kg	0.00227	EPA 8260
Gasoline Range Organics, Soil							
		03/12/2024 09:43		<0.26827	mg/kg	0.26827	EPA 8260
AA06347-1 West Tank							
Collected : 03/04/2024 09:55							
SAR - Magnesium							
		03/12/2024 13:22	10.00	5.400	mEq/L	0.000	EPA 3050B



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Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
SAR - Sodium							
		03/12/2024 13:22	10.00	5.518	mEq/L	0.000	EPA 3050B
SAR - Calcium							
		03/12/2024 13:22	10.00	17.379	mEq/L	0.000	EPA 3050B
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22	10.00	1.635		0.000	EPA 3050B
Soil Conductivity							
		03/12/2024 09:06		3.650	nmhos/cn		USDA 60
AA06347-2 West Tank							
Collected : 03/04/2024 09:55							
Total Metals, Soils - Selenium							
		03/12/2024 03:54	10.00	3.401	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Lead							
		03/12/2024 03:54	10.00	14.041	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Barium							
		03/12/2024 03:54	10.00	197.682	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Cadmium							
		03/12/2024 03:54	10.00	0.288	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Silver							
		03/12/2024 03:54	10.00	<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Zinc							
		03/12/2024 03:54	10.00	50.333	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
		03/12/2024 03:54	10.00	15.189	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
		03/12/2024 03:54	10.00	12.864	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Arsenic							
		03/12/2024 03:54	10.00	6.136	mg/kg	0.025	EPA 3050B



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Project Manager : Ryan Dornbos

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Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
AA06347-3	West Tank Collected : 03/04/2024 09:55	Hot Water Soluble Boron 03/07/2024 09:55		1.034	mg/kg	0.00005	Boron Hot Water Extraction
		Chromium VI, Soil 03/08/2024 10:16		0.099	mg/kg	0.080	EPA 3060A & EPA 7199
		pH, Soils 03/07/2024 13:44		7.80	S.U.	0.01	EPA 9045D
		pH, Soils Temperature 03/07/2024 13:44		22.2	°C		
		DRO & ORO, Soil - ORO 03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
		DRO & ORO, Soil - DRO 03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
		SVOC, Soils - Pyrene 03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Fluoranthene 03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Dibenzo(a,h)anthracene 03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Chrysene 03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Fluorene 03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Indeno(1,2,3-cd)pyrene 03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
		SVOC, Soils - 1-methylnaphthalene 03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 3/12/2024

Report Time : 21:16

REPORT TO

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - Benzo(a)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270
		SVOC, Soils - 2-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Benzo(k)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		VOC, Soils - o-xylene					
		03/12/2024 00:00		<0.00227	mg/kg	0.00227	EPA 8260
		VOC, Soils - 1,3,5-trimethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
		VOC, Soils - Benzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00242	EPA 8260
		VOC, Soils - Toluene					
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
		VOC, Soils - m&p- xylene					
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260

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1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergryoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
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VOC, Soils - Xylenes, total

03/12/2024 00:00 <0.00654 mg/kg 0.00654 EPA 8260

VOC, Soils - 1,2,4-trimethylbenzene

03/12/2024 00:00 <0.00245 mg/kg 0.00245 EPA 8260

VOC, Soils - Ethylbenzene

03/12/2024 00:00 <0.00500 mg/kg 0.00500 EPA 8260

Gasoline Range Organics, Soil

03/12/2024 09:43 <0.26827 mg/kg 0.26827 EPA 8260

AA06348-1 N Pit N Wall

Collected : 03/04/2024 10:00

SAR - Sodium

03/12/2024 13:22 10.00 7.584 mEq/L 0.000 EPA 3050B

SAR - Sodium Adsorption Ratio

03/12/2024 13:22 10.00 23.246 0.000 EPA 3050B

SAR - Calcium

03/12/2024 13:22 10.00 0.061 mEq/L 0.000 EPA 3050B

SAR - Magnesium

03/12/2024 13:22 10.00 0.152 mEq/L 0.000 EPA 3050B

Soil Conductivity

03/12/2024 09:06 0.547 nmhos/cm USDA 60

AA06348-2 N Pit N Wall

Collected : 03/04/2024 10:00

Total Metals, Soils - Zinc

03/12/2024 04:01 10.00 54.680 mg/kg 0.025 EPA 3050B

Total Metals, Soils - Lead

03/12/2024 04:01 10.00 15.283 mg/kg 0.025 EPA 3050B

Total Metals, Soils - Barium

03/12/2024 04:01 10.00 201.971 mg/kg 0.025 EPA 3050B

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ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Total Metals, Soils - Cadmium							
03/12/2024	04:01	10.00		0.277	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Silver							
03/12/2024	04:01	10.00		<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Arsenic							
03/12/2024	04:01	10.00		5.202	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
03/12/2024	04:01	10.00		12.500	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
03/12/2024	04:01	10.00		13.952	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Selenium							
03/12/2024	04:01	10.00		4.386	mg/kg	0.025	EPA 3050B
Hot Water Soluble Boron							
03/07/2024	09:55			2.934	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
03/08/2024	10:16			0.138	mg/kg	0.080	EPA 3060A & EPA 7199
pH, Soils							
03/07/2024	13:44			8.93	S.U.	0.01	EPA 9045D
pH, Soils Temperature							
03/07/2024	13:44			22.2	°C		
AA06348-3 N Pit N Wall							
Collected : 03/04/2024 10:00							
DRO & ORO, Soil - DRO							
03/12/2024	16:54			Not Detected	mg/kg	100.00	EPA 8015D
DRO & ORO, Soil - ORO							
03/12/2024	16:54			Not Detected	mg/kg	100.00	EPA 8015D
SVOC, Soils - Dibenzo(a,h)anthracene							
03/11/2024	15:45			Not Detected	mg/kg	0.005	EPA 8270



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Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - 2-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
		SVOC, Soils - 1-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Indeno(1,2,3-cd)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
		SVOC, Soils - Fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Chrysene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(a)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270
		SVOC, Soils - Benzo(k)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270

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Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
SVOC, Soils - Fluorene							
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
VOC, Soils - 1,2,4-trimethylbenzene							
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260
VOC, Soils - m&p- xylene							
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260
VOC, Soils - Benzene							
		03/12/2024 00:00		Not Detected	mg/kg	0.00242	EPA 8260
VOC, Soils - Toluene							
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
VOC, Soils - o-xylene							
		03/12/2024 00:00		<0.00227	mg/kg	0.00227	EPA 8260
VOC, Soils - Ethylbenzene							
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
VOC, Soils - Xylenes, total							
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
VOC, Soils - 1,3,5-trimethylbenzene							
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
Gasoline Range Organics, Soil							
		03/12/2024 09:43		<0.26827	mg/kg	0.26827	EPA 8260
AA06349-1 N Pit E Wall							
Collected : 03/04/2024 10:05							
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22 10.00		17.186		0.000	EPA 3050B
SAR - Sodium							
		03/12/2024 13:22 10.00		8.507	mEq/L	0.000	EPA 3050B
SAR - Calcium							
		03/12/2024 13:22 10.00		0.382	mEq/L	0.000	EPA 3050B



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Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
SAR - Magnesium							
		03/12/2024 13:22	10.00	0.109	mEq/L	0.000	EPA 3050B
Soil Conductivity							
		03/12/2024 09:06		0.442	nmhos/cn		USDA 60
AA06349-2 N Pit E Wall							
Collected : 03/04/2024 10:05							
Total Metals, Soils - Lead							
		03/12/2024 04:21	10.00	5.703	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Barium							
		03/12/2024 04:21	10.00	85.351	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Cadmium							
		03/12/2024 04:21	10.00	0.071	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Silver							
		03/12/2024 04:21	10.00	<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Selenium							
		03/12/2024 04:21	10.00	2.484	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Arsenic							
		03/12/2024 04:21	10.00	2.307	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
		03/12/2024 04:21	10.00	4.527	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
		03/12/2024 04:21	10.00	4.966	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Zinc							
		03/12/2024 04:21	10.00	18.960	mg/kg	0.025	EPA 3050B
Hot Water Soluble Boron							
		03/07/2024 09:55		0.674	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
		03/08/2024 10:16		<0.080	mg/kg	0.080	EPA 3060A & EPA 7199



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Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		pH, Soils					
		03/07/2024 13:44		9.41	S.U.	0.01	EPA 9045D
		pH, Soils Temperature					
		03/07/2024 13:44		22.0	°C		
AA06349-3 N Pit E Wall							
Collected : 03/04/2024 10:05							
		DRO & ORO, Soil - DRO					
		03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
		DRO & ORO, Soil - ORO					
		03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
		SVOC, Soils - Benzo(a)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - 2-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
		SVOC, Soils - 1-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Indeno(1,2,3-cd)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
		SVOC, Soils - Fluorene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Dibenzo(a,h)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Chrysene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270

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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Benzo(k)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		VOC, Soils - Toluene					
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
		VOC, Soils - 1,3,5-trimethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
		VOC, Soils - Benzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00242	EPA 8260
		VOC, Soils - Ethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
		VOC, Soils - m&p- xylene					
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260
		VOC, Soils - Xylenes, total					
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
		VOC, Soils - 1,2,4-trimethylbenzene					
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260

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Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
VOC, Soils - o-xylene							
		03/12/2024 00:00		<0.00227	mg/kg	0.00227	EPA 8260
Gasoline Range Organics, Soil							
		03/12/2024 09:43		<0.26827	mg/kg	0.26827	EPA 8260
AA06350-1 N Pit S Wall							
Collected : 03/04/2024 10:10							
SAR - Magnesium							
		03/12/2024 13:22	10.00	0.188	mEq/L	0.000	EPA 3050B
SAR - Sodium							
		03/12/2024 13:22	10.00	14.033	mEq/L	0.000	EPA 3050B
SAR - Calcium							
		03/12/2024 13:22	10.00	0	mEq/L	0.000	EPA 3050B
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22	10.00	46.162		0.000	EPA 3050B
Soil Conductivity							
		03/12/2024 09:06		1.290	nmhos/cm		USDA 60
AA06350-2 N Pit S Wall							
Collected : 03/04/2024 10:10							
Total Metals, Soils - Selenium							
		03/12/2024 04:27	10.00	2.277	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Lead							
		03/12/2024 04:27	10.00	9.088	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Barium							
		03/12/2024 04:27	10.00	178.461	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Cadmium							
		03/12/2024 04:27	10.00	0.133	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Silver							
		03/12/2024 04:27	10.00	<0.250 - RL1	mg/kg	0.250	EPA 3050B

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Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Total Metals, Soils - Zinc							
03/12/2024	04:27	10.00		35.417	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
03/12/2024	04:27	10.00		7.960	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
03/12/2024	04:27	10.00		8.229	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Arsenic							
03/12/2024	04:27	10.00		2.581	mg/kg	0.025	EPA 3050B
Hot Water Soluble Boron							
03/07/2024	09:55			2.772	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
03/08/2024	10:16			0.097	mg/kg	0.080	EPA 3060A & EPA 7199
pH, Soils							
03/07/2024	13:44			8.81	S.U.	0.01	EPA 9045D
pH, Soils Temperature							
03/07/2024	13:44			22.0	°C		
AA06350-3 N Pit S Wall							
Collected : 03/04/2024 10:10							
DRO & ORO, Soil - ORO							
03/12/2024	16:54			Not Detected	mg/kg	100.00	EPA 8015D
DRO & ORO, Soil - DRO							
03/12/2024	16:54			Not Detected	mg/kg	100.00	EPA 8015D
SVOC, Soils - Dibenzo(a,h)anthracene							
03/11/2024	15:45			Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - Benzo(a)pyrene							
03/11/2024	15:45			Not Detected	mg/kg	0.00593	EPA 8270
SVOC, Soils - Pyrene							
03/11/2024	15:45			Not Detected	mg/kg	0.01	EPA 8270



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 3/12/2024

Report Time : 21:16

REPORT TO

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Chrysene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - Fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Fluorene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Indeno(1,2,3-cd)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
		SVOC, Soils - 1-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - 2-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(k)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		VOC, Soils - 1,3,5-trimethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260

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1600 Broadway Ste 1050

Denver, CO 80202

303-929-9513

ryan@petersonenergygryoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
VOC, Soils - 1,2,4-trimethylbenzene							
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260
VOC, Soils - Xylenes, total							
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
VOC, Soils - o-xylene							
		03/12/2024 00:00		<0.00227	mg/kg	0.00227	EPA 8260
VOC, Soils - m&p- xylene							
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260
VOC, Soils - Ethylbenzene							
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
VOC, Soils - Toluene							
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
VOC, Soils - Benzene							
		03/12/2024 00:00		Not Detected	mg/kg	0.00242	EPA 8260
Gasoline Range Organics, Soil							
		03/12/2024 09:43		<0.26827	mg/kg	0.26827	EPA 8260
AA06351-1 N Pit W Wall							
Collected : 03/04/2024 10:15							
SAR - Calcium							
		03/12/2024 13:22	10.00	0.049	mEq/L	0.000	EPA 3050B
SAR - Magnesium							
		03/12/2024 13:22	10.00	0.031	mEq/L	0.000	EPA 3050B
SAR - Sodium							
		03/12/2024 13:22	10.00	6.443	mEq/L	0.000	EPA 3050B
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22	10.00	32.249		0.000	EPA 3050B
Soil Conductivity							
		03/12/2024 09:06		0.285	nmhos/cn		USDA 60



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Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
AA06351-2	N Pit W Wall						
	Collected : 03/04/2024 10:15						
		Total Metals, Soils - Selenium					
		03/12/2024 04:34 10.00		3.141	mg/kg	0.025	EPA 3050B
		Total Metals, Soils - Lead					
		03/12/2024 04:34 10.00		11.493	mg/kg	0.025	EPA 3050B
		Total Metals, Soils - Barium					
		03/12/2024 04:34 10.00		161.385	mg/kg	0.025	EPA 3050B
		Total Metals, Soils - Cadmium					
		03/12/2024 04:34 10.00		0.191	mg/kg	0.001	EPA 3050B
		Total Metals, Soils - Silver					
		03/12/2024 04:34 10.00		<0.250 - RL1	mg/kg	0.250	EPA 3050B
		Total Metals, Soils - Zinc					
		03/12/2024 04:34 10.00		45.124	mg/kg	0.025	EPA 3050B
		Total Metals, Soils - Nickel					
		03/12/2024 04:34 10.00		12.777	mg/kg	0.025	EPA 3050B
		Total Metals, Soils - Arsenic					
		03/12/2024 04:34 10.00		4.674	mg/kg	0.025	EPA 3050B
		Total Metals, Soils - Copper					
		03/12/2024 04:34 10.00		11.746	mg/kg	0.025	EPA 3050B
		Hot Water Soluble Boron					Boron Hot Water Extraction
		03/07/2024 09:55		3.066	mg/kg	0.00005	
		Chromium VI, Soil					EPA 3060A & EPA 7199
		03/08/2024 10:16		0.094	mg/kg	0.080	
		pH, Soils					
		03/07/2024 13:44		8.80	S.U.	0.01	EPA 9045D
		pH, Soils Temperature					
		03/07/2024 13:44		22.4	°C		



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ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
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AA06351-3 N Pit W Wall

Collected : 03/04/2024 10:15

DRO & ORO, Soil - ORO

03/12/2024 16:54 Not Detected mg/kg 100.00 EPA 8015D

DRO & ORO, Soil - DRO

03/12/2024 16:54 Not Detected mg/kg 100.00 EPA 8015D

SVOC, Soils - Benzo(a)pyrene

03/11/2024 15:45 Not Detected mg/kg 0.00593 EPA 8270

SVOC, Soils - Dibenzo(a,h)anthracene

03/11/2024 15:45 Not Detected mg/kg 0.005 EPA 8270

SVOC, Soils - Fluorene

03/11/2024 15:45 Not Detected mg/kg 0.01 EPA 8270

SVOC, Soils - Indeno(1,2,3-cd)pyrene

03/11/2024 15:45 Not Detected mg/kg 0.00455 EPA 8270

SVOC, Soils - 1-methylnaphthalene

03/11/2024 15:45 Not Detected mg/kg 0.005 EPA 8270

SVOC, Soils - 2-methylnaphthalene

03/11/2024 15:45 Not Detected mg/kg 0.003 EPA 8270

SVOC, Soils - Pyrene

03/11/2024 15:45 Not Detected mg/kg 0.01 EPA 8270

SVOC, Soils - Chrysene

03/11/2024 15:45 Not Detected mg/kg 0.005 EPA 8270

SVOC, Soils - Benzo(k)fluoranthene

03/11/2024 15:45 Not Detected mg/kg 0.005 EPA 8270

SVOC, Soils - Naphthalene

03/11/2024 15:45 Not Detected mg/kg 0.00306 EPA 8270

SVOC, Soils - Benz(a)anthracene

03/11/2024 15:45 Not Detected mg/kg 0.00623 EPA 8270

**Division of Environmental Testing**

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1600 Broadway Ste 1050

Denver, CO 80202

303-929-9513

ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		VOC, Soils - 1,3,5-trimethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
		VOC, Soils - 1,2,4-trimethylbenzene					
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260
		VOC, Soils - Xylenes, total					
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
		VOC, Soils - o-xylene					
		03/12/2024 00:00		<0.00227	mg/kg	0.00227	EPA 8260
		VOC, Soils - m&p- xylene					
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260
		VOC, Soils - Ethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
		VOC, Soils - Toluene					
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
		VOC, Soils - Benzene					
		03/12/2024 00:00		<0.00242	mg/kg	0.00242	EPA 8260
		Gasoline Range Organics, Soil					
		03/12/2024 09:43		<0.26827	mg/kg	0.26827	EPA 8260

AA06352-1 S Pit N Wall W

Collected : 03/04/2024 10:20

**Division of Environmental Testing**

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1600 Broadway Ste 1050

Denver, CO 80202

303-929-9513

ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
SAR - Calcium							
		03/12/2024 13:22	10.00	0.124	mEq/L	0.000	EPA 3050B
SAR - Magnesium							
		03/12/2024 13:22	10.00	0.147	mEq/L	0.000	EPA 3050B
SAR - Sodium							
		03/12/2024 13:22	10.00	45.736	mEq/L	0.000	EPA 3050B
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22	10.00	124.275		0.000	EPA 3050B
Soil Conductivity							
		03/08/2024 19:07		6.670	nmhos/cn		USDA 60
AA06352-2 S Pit N Wall W							
Collected : 03/04/2024 10:20							
Total Metals, Soils - Barium							
		03/12/2024 04:40	10.00	233.206	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Cadmium							
		03/12/2024 04:40	10.00	0.193	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Silver							
		03/12/2024 04:40	10.00	<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Selenium							
		03/12/2024 04:40	10.00	3.625	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Arsenic							
		03/12/2024 04:40	10.00	4.077	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Lead							
		03/12/2024 04:40	10.00	12.738	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
		03/12/2024 04:40	10.00	12.237	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
		03/12/2024 04:40	10.00	9.044	mg/kg	0.025	EPA 3050B

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Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Total Metals, Soils - Zinc							
		03/12/2024 04:40	10.00	47.019	mg/kg	0.025	EPA 3050B
Hot Water Soluble Boron							
		03/07/2024 09:55		6.676	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
		03/08/2024 10:16		<0.080	mg/kg	0.080	EPA 3060A & EPA 7199
pH, Soils							
		03/07/2024 13:44		9.47	S.U.	0.01	EPA 9045D
pH, Soils Temperature							
		03/07/2024 13:44		21.9	°C		
AA06352-3 S Pit N Wall W							
Collected : 03/04/2024 10:20							
DRO & ORO, Soil - DRO							
		03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
DRO & ORO, Soil - ORO							
		03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
SVOC, Soils - Fluorene							
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
SVOC, Soils - Pyrene							
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
SVOC, Soils - 2-methylnaphthalene							
		03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
SVOC, Soils - Benzo(k)fluoranthene							
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - 1-methylnaphthalene							
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - Indeno(1,2,3-cd)pyrene							
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270

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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - Fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Dibenzo(a,h)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(a)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Chrysene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		VOC, Soils - 1,3,5-trimethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
		VOC, Soils - Benzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00242	EPA 8260
		VOC, Soils - Toluene					
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
		VOC, Soils - Ethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260

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Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
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VOC, Soils - m&p- xylene

03/12/2024 00:00 <0.00427 mg/kg 0.00427 EPA 8260

VOC, Soils - o-xylene

03/12/2024 00:00 <0.00227 mg/kg 0.00227 EPA 8260

VOC, Soils - Xylenes, total

03/12/2024 00:00 <0.00654 mg/kg 0.00654 EPA 8260

VOC, Soils - 1,2,4-trimethylbenzene

03/12/2024 00:00 <0.00245 mg/kg 0.00245 EPA 8260

Gasoline Range Organics, Soil

03/12/2024 09:43 <0.26827 mg/kg 0.26827 EPA 8260

AA06353-1 S Pit N Wall E

Collected : 03/04/2024 10:25

SAR - Sodium

03/12/2024 13:22 10.00 43.299 mEq/L 0.000 EPA 3050B

SAR - Calcium

03/12/2024 13:22 10.00 0.230 mEq/L 0.000 EPA 3050B

SAR - Magnesium

03/12/2024 13:22 10.00 0.083 mEq/L 0.000 EPA 3050B

SAR - Sodium Adsorption Ratio

03/12/2024 13:22 10.00 109.508 0.000 EPA 3050B

Soil Conductivity

03/08/2024 19:07 6.460 nmhos/cm USDA 60

AA06353-2 S Pit N Wall E

Collected : 03/04/2024 10:25

Total Metals, Soils - Nickel

03/12/2024 04:47 10.00 10.314 mg/kg 0.025 EPA 3050B

Total Metals, Soils - Arsenic

03/12/2024 04:47 10.00 3.456 mg/kg 0.025 EPA 3050B

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Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Total Metals, Soils - Lead							
03/12/2024	04:47	10.00		13.556	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
03/12/2024	04:47	10.00		9.707	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Zinc							
03/12/2024	04:47	10.00		53.737	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Barium							
03/12/2024	04:47	10.00		195.639	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Cadmium							
03/12/2024	04:47	10.00		0.222	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Silver							
03/12/2024	04:47	10.00		<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Selenium							
03/12/2024	04:47	10.00		3.106	mg/kg	0.025	EPA 3050B
Hot Water Soluble Boron							
03/07/2024	09:55			3.379	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
03/08/2024	10:16			<0.080	mg/kg	0.080	EPA 3060A & EPA 7199
pH, Soils							
03/07/2024	13:44			9.44	S.U.	0.01	EPA 9045D
pH, Soils Temperature							
03/07/2024	13:44			21.9	°C		
AA06353-3 S Pit N Wall E							
Collected : 03/04/2024 10:25							
DRO & ORO, Soil - ORO							
03/12/2024	16:54			Not Detected	mg/kg	100.00	EPA 8015D
DRO & ORO, Soil - DRO							
03/12/2024	16:54			Not Detected	mg/kg	100.00	EPA 8015D



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Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Benzo(k)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - 2-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
		SVOC, Soils - 1-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Fluorene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Dibenzo(a,h)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Chrysene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(a)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 3/12/2024**Report Time :** 21:16**REPORT TO**

1600 Broadway Ste 1050

Denver, CO 80202

303-929-9513

ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
SVOC, Soils - Benzo(b)fluoranthene							
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - Indeno(1,2,3-cd)pyrene							
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
VOC, Soils - Ethylbenzene							
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
VOC, Soils - Toluene							
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
VOC, Soils - m&p- xylene							
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260
VOC, Soils - o-xylene							
		03/12/2024 00:00		<0.00227	mg/kg	0.00227	EPA 8260
VOC, Soils - 1,2,4-trimethylbenzene							
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260
VOC, Soils - 1,3,5-trimethylbenzene							
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
VOC, Soils - Benzene							
		03/12/2024 00:00		<0.00242	mg/kg	0.00242	EPA 8260
VOC, Soils - Xylenes, total							
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
Gasoline Range Organics, Soil							
		03/12/2024 09:43		<0.26827	mg/kg	0.26827	EPA 8260
AA06354-1 S Pit E Wall N							
Collected : 03/04/2024 10:30							
SAR - Calcium							
		03/12/2024 13:22	10.00	0.101	mEq/L	0.000	EPA 3050B
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22	10.00	157.541		0.000	EPA 3050B



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Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
SAR - Magnesium							
		03/12/2024 13:22	10.00	0.128	mEq/L	0.000	EPA 3050B
SAR - Sodium							
		03/12/2024 13:22	10.00	53.244	mEq/L	0.000	EPA 3050B
Soil Conductivity							
		03/08/2024 19:07		7.950	nmhos/cn		USDA 60
AA06354-2 S Pit E Wall N							
Collected : 03/04/2024 10:30							
Total Metals, Soils - Lead							
		03/12/2024 04:53	10.00	11.729	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Barium							
		03/12/2024 04:53	10.00	229.916	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Cadmium							
		03/12/2024 04:53	10.00	0.183	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Silver							
		03/12/2024 04:53	10.00	<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Selenium							
		03/12/2024 04:53	10.00	2.366	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Arsenic							
		03/12/2024 04:53	10.00	5.264	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
		03/12/2024 04:53	10.00	12.496	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
		03/12/2024 04:53	10.00	10.559	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Zinc							
		03/12/2024 04:53	10.00	52.784	mg/kg	0.025	EPA 3050B
Hot Water Soluble Boron							
		03/07/2024 09:55		2.743	mg/kg	0.00005	Boron Hot Water Extraction



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Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
AA06354-3	S Pit E Wall N Collected : 03/04/2024 10:30	Chromium VI, Soil 03/08/2024 10:16		<0.080	mg/kg	0.080	EPA 3060A & EPA 7199
		pH, Soils 03/07/2024 16:37		9.56	S.U.	0.01	EPA 9045D
		pH, Soils Temperature 03/07/2024 16:37		22.1	°C		
		DRO & ORO, Soil - DRO 03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
		DRO & ORO, Soil - ORO 03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
		SVOC, Soils - 2-methylnaphthalene 03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
		SVOC, Soils - Anthracene 03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - Benzo(k)fluoranthene 03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Dibenzo(a,h)anthracene 03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene 03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benz(a)anthracene 03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Fluoranthene 03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Acenaphthene 03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270



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Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Fluorene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Indeno(1,2,3-cd)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
		SVOC, Soils - 1-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - Pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Chrysene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(a)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270
		VOC, Soils - 1,2,4-trimethylbenzene					
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260
		VOC, Soils - 1,3,5-trimethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
		VOC, Soils - Benzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00242	EPA 8260
		VOC, Soils - Toluene					
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
		VOC, Soils - Ethylbenzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00500	EPA 8260
		VOC, Soils - m&p- xylene					
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260



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Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
VOC, Soils - o-xylene							
		03/12/2024 00:00		<0.00227	mg/kg	0.00227	EPA 8260
VOC, Soils - Xylenes, total							
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
Gasoline Range Organics, Soil							
		03/12/2024 09:43		<0.26827	mg/kg	0.26827	EPA 8260
AA06355-1 S Pit E Wall S							
Collected : 03/04/2024 10:35							
SAR - Calcium							
		03/12/2024 13:22	10.00	0.182	mEq/L	0.000	EPA 3050B
SAR - Sodium							
		03/12/2024 13:22	10.00	42.521	mEq/L	0.000	EPA 3050B
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22	10.00	104.860		0.000	EPA 3050B
SAR - Magnesium							
		03/12/2024 13:22	10.00	0.147	mEq/L	0.000	EPA 3050B
Soil Conductivity							
		03/08/2024 19:07		6.490	nmhos/cm		USDA 60
AA06355-2 S Pit E Wall S							
Collected : 03/04/2024 10:35							
Total Metals, Soils - Selenium							
		03/12/2024 05:00	10.00	2.232	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
		03/12/2024 05:00	10.00	10.006	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
		03/12/2024 05:00	10.00	8.756	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Zinc							
		03/12/2024 05:00	10.00	34.239	mg/kg	0.025	EPA 3050B

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Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Total Metals, Soils - Arsenic							
03/12/2024	05:00	10.00		4.105	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Silver							
03/12/2024	05:00	10.00		<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Barium							
03/12/2024	05:00	10.00		192.322	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Lead							
03/12/2024	05:00	10.00		9.074	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Cadmium							
03/12/2024	05:00	10.00		0.146	mg/kg	0.001	EPA 3050B
Hot Water Soluble Boron							
03/07/2024	09:55			2.812	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
03/08/2024	10:16			<0.080	mg/kg	0.080	EPA 3060A & EPA 7199
pH, Soils							
03/07/2024	16:37			9.50	S.U.	0.01	EPA 9045D
pH, Soils Temperature							
03/07/2024	16:37			22.0	°C		
AA06355-3 S Pit E Wall S							
Collected : 03/04/2024 10:35							
DRO & ORO, Soil - ORO							
03/12/2024	16:54			Not Detected	mg/kg	100.00	EPA 8015D
DRO & ORO, Soil - DRO							
03/12/2024	16:54			Not Detected	mg/kg	100.00	EPA 8015D
SVOC, Soils - 1-methylnaphthalene							
03/11/2024	15:45			Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - Anthracene							
03/11/2024	15:45			Not Detected	mg/kg	0.00584	EPA 8270



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Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(k)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(a)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270
		SVOC, Soils - Chrysene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Dibenzo(a,h)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Indeno(1,2,3-cd)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
		SVOC, Soils - 2-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - Pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Fluorene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270

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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
VOC, Soils - 1,3,5-trimethylbenzene							
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
VOC, Soils - Xylenes, total							
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
VOC, Soils - o-xylene							
		03/12/2024 00:00		<0.00227	mg/kg	0.00227	EPA 8260
VOC, Soils - m&p- xylene							
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260
VOC, Soils - Ethylbenzene							
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
VOC, Soils - Toluene							
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
VOC, Soils - Benzene							
		03/12/2024 00:00		Not Detected	mg/kg	0.00242	EPA 8260
VOC, Soils - 1,2,4-trimethylbenzene							
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260
Gasoline Range Organics, Soil							
		03/12/2024 09:43		<0.26827	mg/kg	0.26827	EPA 8260
AA06356-1 S Pit S Wall E							
Collected : 03/04/2024 10:40							
SAR - Calcium							
		03/12/2024 13:22	10.00	1.050	mEq/L	0.000	EPA 3050B
SAR - Sodium							
		03/12/2024 13:22	10.00	35.539	mEq/L	0.000	EPA 3050B
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22	10.00	43.788		0.000	EPA 3050B
SAR - Magnesium							
		03/12/2024 13:22	10.00	0.268	mEq/L	0.000	EPA 3050B

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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Soil Conductivity							
		03/08/2024 19:07		5.550	nmhos/cm		USDA 60
AA06356-2 S Pit S Wall E							
Collected : 03/04/2024 10:40							
Total Metals, Soils - Arsenic							
		03/12/2024 05:07 10.00		4.619	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Lead							
		03/12/2024 05:07 10.00		11.109	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Barium							
		03/12/2024 05:07 10.00		209.902	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Cadmium							
		03/12/2024 05:07 10.00		0.192	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Silver							
		03/12/2024 05:07 10.00		<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Selenium							
		03/12/2024 05:07 10.00		3.076	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Zinc							
		03/12/2024 05:07 10.00		44.156	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
		03/12/2024 05:07 10.00		11.073	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
		03/12/2024 05:07 10.00		11.810	mg/kg	0.025	EPA 3050B
Hot Water Soluble Boron							
		03/07/2024 09:55		3.538	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
		03/08/2024 10:16		<0.080	mg/kg	0.080	EPA 3060A & EPA 7199
pH, Soils							
		03/07/2024 16:37		8.93	S.U.	0.01	EPA 9045D



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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
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pH, Soils Temperature

03/07/2024 16:37

21.9

°C

AA06356-3 S Pit S Wall E

Collected : 03/04/2024 10:40

DRO & ORO, Soil - DRO

03/12/2024 16:54

Not Detected

mg/kg 100.00

EPA 8015D

DRO & ORO, Soil - ORO

03/12/2024 16:54

Not Detected

mg/kg 100.00

EPA 8015D

SVOC, Soils - Benzo(k)fluoranthene

03/11/2024 15:45

Not Detected

mg/kg 0.005

EPA 8270

SVOC, Soils - Pyrene

03/11/2024 15:45

Not Detected

mg/kg 0.01

EPA 8270

SVOC, Soils - Naphthalene

03/11/2024 15:45

Not Detected

mg/kg 0.00306

EPA 8270

SVOC, Soils - 2-methylnaphthalene

03/11/2024 15:45

Not Detected

mg/kg 0.003

EPA 8270

SVOC, Soils - 1-methylnaphthalene

03/11/2024 15:45

Not Detected

mg/kg 0.005

EPA 8270

SVOC, Soils - Fluoranthene

03/11/2024 15:45

Not Detected

mg/kg 0.00336

EPA 8270

SVOC, Soils - Fluorene

03/11/2024 15:45

Not Detected

mg/kg 0.01

EPA 8270

SVOC, Soils - Dibenzo(a,h)anthracene

03/11/2024 15:45

Not Detected

mg/kg 0.005

EPA 8270

SVOC, Soils - Chrysene

03/11/2024 15:45

Not Detected

mg/kg 0.005

EPA 8270

SVOC, Soils - Benzo(a)pyrene

03/11/2024 15:45

Not Detected

mg/kg 0.00593

EPA 8270



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 3/12/2024

Report Time : 21:16

REPORT TO

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Indeno(1,2,3-cd)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
		VOC, Soils - o-xylene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00227	EPA 8260
		VOC, Soils - Benzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00242	EPA 8260
		VOC, Soils - Toluene					
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
		VOC, Soils - m&p- xylene					
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260
		VOC, Soils - Xylenes, total					
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
		VOC, Soils - 1,2,4-trimethylbenzene					
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260
		VOC, Soils - 1,3,5-trimethylbenzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00500	EPA 8260
		VOC, Soils - Ethylbenzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00500	EPA 8260

**Division of Environmental Testing**

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FINAL RESULTS REPORT**Report Date :** 3/12/2024**Report Time :** 21:16**REPORT TO**

1600 Broadway Ste 1050

Denver, CO 80202

303-929-9513

ryan@petersonenergryoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start		Dilution	Result	Units	Reporting Limit	Method Reference
AA06357-1	S Pit S Wall W Collected : 03/04/2024 10:45	Gasoline Range Organics, Soil						
		03/12/2024	09:43		<0.26827	mg/kg	0.26827	EPA 8260
		SAR - Sodium						
		03/12/2024	13:22	10.00	44.996	mEq/L	0.000	EPA 3050B
		SAR - Sodium Adsorption Ratio						
		03/12/2024	13:22	10.00	64.671		0.000	EPA 3050B
		SAR - Calcium						
		03/12/2024	13:22	10.00	0.743	mEq/L	0.000	EPA 3050B
		SAR - Magnesium						
		03/12/2024	13:22	10.00	0.225	mEq/L	0.000	EPA 3050B
AA06357-2	S Pit S Wall W Collected : 03/04/2024 10:45	Soil Conductivity						
		03/08/2024	19:07		6.780	nmhos/cn		USDA 60
		Total Metals, Soils - Cadmium						
		03/12/2024	05:13	10.00	0.191	mg/kg	0.001	EPA 3050B
		Total Metals, Soils - Arsenic						
		03/12/2024	05:13	10.00	4.842	mg/kg	0.025	EPA 3050B
		Total Metals, Soils - Zinc						
		03/12/2024	05:13	10.00	43.159	mg/kg	0.025	EPA 3050B
		Total Metals, Soils - Copper						
		03/12/2024	05:13	10.00	10.405	mg/kg	0.025	EPA 3050B
		Total Metals, Soils - Nickel						
		03/12/2024	05:13	10.00	11.578	mg/kg	0.025	EPA 3050B
		Total Metals, Soils - Silver						
		03/12/2024	05:13	10.00	<0.250 - RL1	mg/kg	0.250	EPA 3050B



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ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Total Metals, Soils - Selenium							
		03/12/2024 05:13	10.00	3.556	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Barium							
		03/12/2024 05:13	10.00	199.014	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Lead							
		03/12/2024 05:13	10.00	11.766	mg/kg	0.025	EPA 3050B
Hot Water Soluble Boron							
		03/07/2024 09:55		3.036	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
		03/08/2024 10:16		<0.080	mg/kg	0.080	EPA 3060A & EPA 7199
pH, Soils							
		03/07/2024 16:37		9.09	S.U.	0.01	EPA 9045D
pH, Soils Temperature							
		03/07/2024 16:37		22.2	°C		
AA06357-3 S Pit S Wall W							
Collected : 03/04/2024 10:45							
DRO & ORO, Soil - DRO							
		03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
DRO & ORO, Soil - ORO							
		03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
SVOC, Soils - Fluorene							
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
SVOC, Soils - Benzo(b)fluoranthene							
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - Benzo(k)fluoranthene							
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - Benzo(a)pyrene							
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270

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303-929-9513

ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Chrysene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - Indeno(1,2,3-cd)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
		SVOC, Soils - 1-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - 2-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Dibenzo(a,h)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		VOC, Soils - 1,3,5-trimethylbenzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00500	EPA 8260
		VOC, Soils - Benzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00242	EPA 8260

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Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
VOC, Soils - Toluene							
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
VOC, Soils - Ethylbenzene							
		03/12/2024 00:00		Not Detected	mg/kg	0.00500	EPA 8260
VOC, Soils - m&p- xylene							
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260
VOC, Soils - o-xylene							
		03/12/2024 00:00		Not Detected	mg/kg	0.00227	EPA 8260
VOC, Soils - Xylenes, total							
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
VOC, Soils - 1,2,4-trimethylbenzene							
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260
Gasoline Range Organics, Soil							
		03/12/2024 09:43		<0.26827	mg/kg	0.26827	EPA 8260
AA06358-1 S Pit W Wall S							
Collected : 03/04/2024 10:50							
SAR - Sodium							
		03/12/2024 13:22	10.00	52.273	mEq/L	0.000	EPA 3050B
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22	10.00	82.960		0.000	EPA 3050B
SAR - Calcium							
		03/12/2024 13:22	10.00	0.591	mEq/L	0.000	EPA 3050B
SAR - Magnesium							
		03/12/2024 13:22	10.00	0.203	mEq/L	0.000	EPA 3050B
Soil Conductivity							
		03/08/2024 19:07		9.210	nmhos/cn		USDA 60
AA06358-2 S Pit W Wall S							
Collected : 03/04/2024 10:50							

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Denver, CO 80202

303-929-9513

ryan@petersonenergryoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Total Metals, Soils - Silver							
03/12/2024	05:20	10.00		<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Zinc							
03/12/2024	05:20	10.00		45.444	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
03/12/2024	05:20	10.00		10.547	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
03/12/2024	05:20	10.00		9.343	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Selenium							
03/12/2024	05:20	10.00		4.021	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Cadmium							
03/12/2024	05:20	10.00		0.195	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Barium							
03/12/2024	05:20	10.00		160.074	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Lead							
03/12/2024	05:20	10.00		12.141	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Arsenic							
03/12/2024	05:20	10.00		3.663	mg/kg	0.025	EPA 3050B
Hot Water Soluble Boron							
03/07/2024	09:55			2.863	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
03/08/2024	10:16			<0.080	mg/kg	0.080	EPA 3060A & EPA 7199
pH, Soils							
03/07/2024	16:37			8.79	S.U.	0.01	EPA 9045D
pH, Soils Temperature							
03/07/2024	16:37			22.3	°C		

AA06358-3 S Pit W Wall S

Collected : 03/04/2024 10:50

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 3/12/2024**Report Time :** 21:16**REPORT TO**

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		DRO & ORO, Soil - DRO					
		03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
		DRO & ORO, Soil - ORO					
		03/12/2024 16:54		Not Detected	mg/kg	100.00	EPA 8015D
		SVOC, Soils - Indeno(1,2,3-cd)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
		SVOC, Soils - Benzo(b)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(k)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Benzo(a)pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270
		SVOC, Soils - Chrysene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Dibenzo(a,h)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Fluorene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - 1-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - 2-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270

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ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		VOC, Soils - 1,2,4-trimethylbenzene					
		03/12/2024 00:00		<0.00245	mg/kg	0.00245	EPA 8260
		VOC, Soils - Xylenes, total					
		03/12/2024 00:00		<0.00654	mg/kg	0.00654	EPA 8260
		VOC, Soils - o-xylene					
		03/12/2024 00:00		<0.00227	mg/kg	0.00227	EPA 8260
		VOC, Soils - m&p- xylene					
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260
		VOC, Soils - Ethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
		VOC, Soils - Toluene					
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
		VOC, Soils - Benzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00242	EPA 8260
		VOC, Soils - 1,3,5-trimethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
		Gasoline Range Organics, Soil					
		03/12/2024 09:43		<0.26827	mg/kg	0.26827	EPA 8260

AA06359-1 S Pit W Wall N

Collected : 03/04/2024 10:55

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

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1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
SAR - Magnesium							
		03/12/2024 13:22	10.00	0.089	mEq/L	0.000	EPA 3050B
SAR - Calcium							
		03/12/2024 13:22	10.00	0.102	mEq/L	0.000	EPA 3050B
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22	10.00	102.467		0.000	EPA 3050B
SAR - Sodium							
		03/12/2024 13:22	10.00	31.627	mEq/L	0.000	EPA 3050B
Soil Conductivity							
		03/08/2024 19:07		5.650	nmhos/cn		USDA 60
AA06359-2 S Pit W Wall N							
Collected : 03/04/2024 10:55							
Total Metals, Soils - Zinc							
		03/12/2024 05:39	10.00	37.663	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Arsenic							
		03/12/2024 05:39	10.00	3.927	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
		03/12/2024 05:39	10.00	9.747	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Selenium							
		03/12/2024 05:39	10.00	3.144	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Silver							
		03/12/2024 05:39	10.00	<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Copper							
		03/12/2024 05:39	10.00	7.590	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Barium							
		03/12/2024 05:39	10.00	186.216	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Lead							
		03/12/2024 05:39	10.00	10.873	mg/kg	0.025	EPA 3050B

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Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Total Metals, Soils - Cadmium							
		03/12/2024 05:39	10.00	0.166	mg/kg	0.001	EPA 3050B
Hot Water Soluble Boron							
		03/07/2024 09:55		2.906	mg/kg	0.00005	Boron Hot Water Extraction
Chromium VI, Soil							
		03/08/2024 10:16		<0.080	mg/kg	0.080	EPA 3060A & EPA 7199
pH, Soils							
		03/07/2024 16:37		9.21	S.U.	0.01	EPA 9045D
pH, Soils Temperature							
		03/07/2024 16:37		22.2	°C		
AA06359-3 S Pit W Wall N							
Collected : 03/04/2024 10:55							
DRO & ORO, Soil - ORO							
		03/12/2024 18:05		Not Detected	mg/kg	100.00	EPA 8015D
DRO & ORO, Soil - DRO							
		03/12/2024 18:05		Not Detected	mg/kg	100.00	EPA 8015D
SVOC, Soils - Indeno(1,2,3-cd)pyrene							
		03/11/2024 15:45		Not Detected	mg/kg	0.00455	EPA 8270
SVOC, Soils - Benzo(b)fluoranthene							
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - Benzo(a)pyrene							
		03/11/2024 15:45		Not Detected	mg/kg	0.00593	EPA 8270
SVOC, Soils - Chrysene							
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - Dibenzo(a,h)anthracene							
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
SVOC, Soils - Fluorene							
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 3/12/2024

Report Time : 21:16

REPORT TO

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
		SVOC, Soils - Anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00584	EPA 8270
		SVOC, Soils - 1-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Pyrene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		SVOC, Soils - Naphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00306	EPA 8270
		SVOC, Soils - 2-methylnaphthalene					
		03/11/2024 15:45		Not Detected	mg/kg	0.003	EPA 8270
		SVOC, Soils - Benz(a)anthracene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00623	EPA 8270
		SVOC, Soils - Fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.00336	EPA 8270
		SVOC, Soils - Benzo(k)fluoranthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.005	EPA 8270
		SVOC, Soils - Acenaphthene					
		03/11/2024 15:45		Not Detected	mg/kg	0.01	EPA 8270
		VOC, Soils - Toluene					
		03/12/2024 00:00		<0.00263	mg/kg	0.00263	EPA 8260
		VOC, Soils - Benzene					
		03/12/2024 00:00		Not Detected	mg/kg	0.00242	EPA 8260
		VOC, Soils - Ethylbenzene					
		03/12/2024 00:00		<0.00500	mg/kg	0.00500	EPA 8260
		VOC, Soils - m&p- xylene					
		03/12/2024 00:00		<0.00427	mg/kg	0.00427	EPA 8260

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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
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VOC, Soils - o-xylene

03/12/2024 00:00

Not Detected

mg/kg

0.00227

EPA 8260

VOC, Soils - Xylenes, total

03/12/2024 00:00

<0.00654

mg/kg

0.00654

EPA 8260

VOC, Soils - 1,2,4-trimethylbenzene

03/12/2024 00:00

<0.00245

mg/kg

0.00245

EPA 8260

VOC, Soils - 1,3,5-trimethylbenzene

03/12/2024 00:00

Not Detected

mg/kg

0.00500

EPA 8260

Gasoline Range Organics, Soil

03/12/2024 09:43

<0.26827

mg/kg

0.26827

EPA 8260

AA06360-1 Background 1

Collected : 03/04/2024 11:00

SAR - Sodium Adsorption Ratio

03/12/2024 13:22 10.00

0.319

0.000

EPA 3050B

SAR - Sodium

03/12/2024 13:22 10.00

0.545

mEq/L

0.000

EPA 3050B

SAR - Magnesium

03/12/2024 13:22 10.00

0.965

mEq/L

0.000

EPA 3050B

SAR - Calcium

03/12/2024 13:22 10.00

4.870

mEq/L

0.000

EPA 3050B

Soil Conductivity

03/08/2024 19:07

0.837

nmhos/cm

USDA 60

AA06360-2 Background 1

Collected : 03/04/2024 11:00

Hot Water Soluble Boron

03/07/2024 09:55

0.582

mg/kg

0.00005

Boron Hot Water
Extraction

pH, Soils

03/07/2024 16:37

7.78

S.U.

0.01

EPA 9045D

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Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
pH, Soils Temperature							
		03/07/2024 16:37		22.2	°C		
AA06360-3 Background 1							
Collected : 03/04/2024 11:00							
Total Metals, Soils - Silver							
		03/12/2024 05:46 10.00		<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Cadmium							
		03/12/2024 05:46 10.00		0.281	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Lead							
		03/12/2024 05:46 10.00		14.698	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Barium							
		03/12/2024 05:46 10.00		166.949	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Zinc							
		03/12/2024 05:46 10.00		46.538	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Copper							
		03/12/2024 05:46 10.00		10.782	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Nickel							
		03/12/2024 05:46 10.00		11.167	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Arsenic							
		03/12/2024 05:46 10.00		5.013	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Selenium							
		03/12/2024 05:46 10.00		3.865	mg/kg	0.025	EPA 3050B
Chromium VI, Soil							
		03/08/2024 10:16		0.097	mg/kg	0.080	EPA 3060A & EPA 7199
AA06361-1 Background 2							
Collected : 03/04/2024 11:05							
SAR - Sodium Adsorption Ratio							
		03/12/2024 13:22 10.00		0.156		0.000	EPA 3050B



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Project Name : Marick A-Z

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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
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SAR - Calcium

03/12/2024 13:22 10.00 4.323 mEq/L 0.000 EPA 3050B

SAR - Magnesium

03/12/2024 13:22 10.00 1.427 mEq/L 0.000 EPA 3050B

SAR - Sodium

03/12/2024 13:22 10.00 0.264 mEq/L 0.000 EPA 3050B

Soil Conductivity

03/08/2024 19:07 0.701 nmhos/cn USDA 60

AA06361-2 Background 2

Collected : 03/04/2024 11:05

Hot Water Soluble Boron

03/07/2024 09:55 0.622 mg/kg 0.00005 Boron Hot Water Extraction

pH, Soils

03/07/2024 16:37 7.47 S.U. 0.01 EPA 9045D

pH, Soils Temperature

03/07/2024 16:37 22.0 °C

AA06361-3 Background 2

Collected : 03/04/2024 11:05

Total Metals, Soils - Nickel

03/12/2024 05:52 10.00 10.482 mg/kg 0.025 EPA 3050B

Total Metals, Soils - Copper

03/12/2024 05:52 10.00 10.526 mg/kg 0.025 EPA 3050B

Total Metals, Soils - Zinc

03/12/2024 05:52 10.00 45.791 mg/kg 0.025 EPA 3050B

Total Metals, Soils - Arsenic

03/12/2024 05:52 10.00 5.183 mg/kg 0.025 EPA 3050B

Total Metals, Soils - Selenium

03/12/2024 05:52 10.00 3.037 mg/kg 0.025 EPA 3050B



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Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Total Metals, Soils - Silver							
03/12/2024	05:52	10.00		<0.250 - RL1	mg/kg	0.250	EPA 3050B
Total Metals, Soils - Cadmium							
03/12/2024	05:52	10.00		0.246	mg/kg	0.001	EPA 3050B
Total Metals, Soils - Barium							
03/12/2024	05:52	10.00		148.530	mg/kg	0.025	EPA 3050B
Total Metals, Soils - Lead							
03/12/2024	05:52	10.00		13.842	mg/kg	0.025	EPA 3050B
Chromium VI, Soil							
03/08/2024	10:16			0.085	mg/kg	0.080	EPA 3060A & EPA 7199



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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
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QC Report

BORON-2238

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
DUP	AA06345	1.881	0.00005	mg/kg		1.829		2.8032	-15 - 15
MB	AA06429	0.011		mg/kg					
LCS	AA06430	0.821		mg/kg	1.000	82.100	80 - 120		
LCS	AA06431	9.617		mg/kg	9.000	106.86	80 - 120		

CHROM_VI_SOIL-2223

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
DUP	AA06345	0.082	0.080	mg/kg		<0.080			
MB	AA06398	0.001		mg/kg					
LCS	AA06400	0.041		mg/kg	0.040	102.50			
LCS	AA06401	0.042		mg/kg	0.040	105.00			

GRO_SOIL-2269

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
DUP	AA06345	1.0442759	0.26827	mg/kg		<0.26827		18.852	
Matrix Spike	AA06345	1.2616308		mg/kg	2.150	<0.26827	58.681		
MB	AA06504	<0.042		mg/kg					
LCS	AA06505	5.3826191		mg/kg	4.300	125.18			
LCS	AA06506	3.2482332		mg/kg	4.300	75.540			

PH_S-2232

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
DUP	AA06345	8.01	0.01	S.U.		7.97		0.5006257	-5 - 5
LCS	AA06411	6.93	0.01	S.U.	6.86	101.02	95 - 105		
LCS	AA06412	6.90	0.01	S.U.	6.86	100.58	95 - 105		

PH_S-2249

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
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Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID		Analyte Name Analysis Start		Dilution	Result	Units	Reporting Limit	Method Reference
DUP	AA06354	9.55	0.01	S.U.		9.56		0.1046572	-5 - 5
LCS	AA06453	6.89	0.01	S.U.	6.86		100.44	95 - 105	
LCS	AA06454	6.86	0.01	S.U.	6.86		100.00	95 - 105	
SOIL_CONDUCTIVITY-2260									
		Reporting		Spike	Source		% REC		RPD
Analyte	Result	Limit		Units	Level	Result	%Rec	Limits	RPD Limit
DUP	AA06355	6.960		mmhos/cm		6.490			6.9888
LCS	AA06485	10230		µS/cm	10000		102.30		
LCS	AA06486	10140		µS/cm	10000		101.40		
SOIL_CONDUCTIVITY-2287									
		Reporting		Spike	Source		% REC		RPD
Analyte	Result	Limit		Units	Level	Result	%Rec	Limits	RPD Limit
DUP	AA06362	92.8		µS/cm		90.5			2.5095
LCS	AA06541	10090		µS/cm	10000		100.90		
LCS	AA06542	10360		µS/cm	10000		103.60		

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Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
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QC Report**DRO_ORO_SOIL-2305**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%Rec	% REC Limits	RPD	RPD Limit
AA06354									
DRO									
DUP	438.521				Not Detected			4.2487	
Matrix Spike	420.277			350	Not Detected	120.08			
ORO									
DUP	405.587				Not Detected			17.958	
Matrix Spike	338.752			350	Not Detected	96.786			
AA06578									
DRO									
MB	Not Detected								
ORO									
MB	Not Detected								
AA06579									
DRO									
LCS	395.149			350		112.90			
ORO									
LCS	296.571			350		84.735			
AA06580									
DRO									
LCS	410.15			350		117.19			
ORO									
LCS	298.88			350		85.394			
Arsenic									
DUP	4.173	0.025	mg/kg		4.311			3.2532	0 - 15
Matrix Spike	13.649		mg/kg	10	4.311	93.380			

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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Barium							
DUP	148.779	0.025	mg/kg	148.533		0.16548	0 - 15
Matrix Spike	178.998		mg/kg	10	148.533	304.65	
Cadmium							
DUP	0.193	0.001	mg/kg		0.187	3.1579	0 - 15
Matrix Spike	10.482		mg/kg	10	0.187	102.95	
Copper							
DUP	8.779	0.025	mg/kg		9.023	2.7413	0 - 15
Matrix Spike	19.543		mg/kg	10	9.023	105.20	
Lead							
DUP	10.119	0.025	mg/kg		10.382	2.5657	0 - 15
Matrix Spike	20.261		mg/kg	10	10.382	98.790	
Nickel							
DUP	8.980	0.025	mg/kg		9.258	3.0486	0 - 15
Matrix Spike	20.955		mg/kg	10	9.258	116.97	
Selenium							
DUP	2.059	0.025	mg/kg		2.192	6.2574	0 - 15
Matrix Spike	15.454		mg/kg	10	2.192	132.62	
Silver							
DUP	<0.250	0.250	mg/kg		<0.250		
Matrix Spike	9.771		mg/kg	10	<0.250	97.710	
Zinc							
DUP	38.235	0.025	mg/kg		35.884	6.3439	0 - 15
Matrix Spike	57.393		mg/kg	10	35.884	215.09	
AA06417							
Arsenic							
MB	0.000		mg/kg				
Barium							
MB	0.000		mg/kg				
Cadmium							



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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
MB	0.000	mg/kg					
Copper							
MB	0.000	mg/kg					
Lead							
MB	0.000	mg/kg					
Nickel							
MB	0.000	mg/kg					
Selenium							
MB	0.000	mg/kg					
Silver							
MB	0.002	mg/kg					
Zinc							
MB	0.000	mg/kg					
AA06419							
Arsenic							
LCS	0.088	mg/kg	0.090	97.778	80 - 120		
Barium							
LCS	0.092	mg/kg	0.090	102.22	80 - 120		
Cadmium							
LCS	0.091	mg/kg	0.090	101.11	80 - 120		
Copper							
LCS	0.090	mg/kg	0.090	100.00	80 - 120		
Lead							
LCS	0.092	mg/kg	0.090	102.22	80 - 120		
Nickel							
LCS	0.091	mg/kg	0.090	101.11	80 - 120		
Selenium							
LCS	0.093	mg/kg	0.090	103.33	80 - 120		
Silver							
LCS	0.094	mg/kg	0.090	104.44	80 - 120		

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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Zinc							
LCS	0.090	mg/kg	0.090	100.00	80 - 120		
AA06420							
Arsenic							
LCS	0.096	mg/kg	0.090	106.67	80 - 120		
Barium							
LCS	0.093	mg/kg	0.090	103.33	80 - 120		
Cadmium							
LCS	0.091	mg/kg	0.090	101.11	80 - 120		
Copper							
LCS	0.096	mg/kg	0.090	106.67	80 - 120		
Lead							
LCS	0.095	mg/kg	0.090	105.56	80 - 120		
Nickel							
LCS	0.096	mg/kg	0.090	106.67	80 - 120		
Selenium							
LCS	0.095	mg/kg	0.090	105.56	80 - 120		
Silver							
LCS	0.098	mg/kg	0.090	108.89	80 - 120		
Zinc							
LCS	0.095	mg/kg	0.090	105.56	80 - 120		
Calcium							
DUP	0.204	mEq/L	0.204	0.182		11.399	
Magnesium							
DUP	0.163	mEq/L	0.163	0.147		10.323	
Sodium							
DUP	46.625	mEq/L	46.625	42.521		9.2074	
AA06478							
Calcium							
MB	-0.442	mEq/L	-0.442				

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Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Magnesium							
MB	0.028	mEq/L	0.028				
Sodium							
MB	0.049	mEq/L	0.049				
AA06479							
Calcium							
LCS	10.195	ppm	10	101.95			
Magnesium							
LCS	10.209	ppm	10	102.09			
Sodium							
LCS	9.94	ppm	10	99.400			
AA06480							
Calcium							
LCS	519.158	ppm	500	103.83			
Magnesium							
LCS	474.776	ppm	500	94.955			
Sodium							
LCS	464.602	ppm	500	92.920			
1-methylnaphthalene							
DUP	381.206	mg/kg	gt Detectd			8.2609	
Matrix Spike	350.964	mg/kg	300	gt Detectd	116.99		
2-methylnaphthalene							
DUP	388.986	mg/kg	gt Detectd			7.4686	
Matrix Spike	360.980	mg/kg	300	gt Detectd	120.33		
Acenaphthene							
DUP	361.299	mg/kg	gt Detectd			6.7360	
Matrix Spike	337.755	mg/kg	300	gt Detectd	112.58		
Anthracene							
DUP	312.442	mg/kg	gt Detectd			11.992	
Matrix Spike	352.301	mg/kg	300	gt Detectd	117.43		



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1600 Broadway Ste 1050 Denver, CO 80202 303-929-9513 ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Benz(a)anthracene							
DUP	325.666	mg/kg		nt Detecte		1.2605	
Matrix Spike	329.797	mg/kg	300	nt Detecte	109.93		
Benzo(a)pyrene							
DUP	266.106	mg/kg		nt Detecte		0.31442	
Matrix Spike	266.944	mg/kg	300	nt Detecte	88.981		
Benzo(b)fluoranthene							
DUP	272.131	mg/kg		nt Detecte		0.36167	
Matrix Spike	273.117	mg/kg	300	nt Detecte	91.039		
Benzo(k)fluoranthene							
DUP	320.601	mg/kg		nt Detecte		5.4786	
Matrix Spike	338.660	mg/kg	300	nt Detecte	112.89		
Chrysene							
DUP	308.277	mg/kg		nt Detecte		3.7245	
Matrix Spike	297.005	mg/kg	300	nt Detecte	99.002		
Dibenzo(a,h)anthracene							
DUP	295.414	mg/kg		nt Detecte		0.34961	
Matrix Spike	294.383	mg/kg	300	nt Detecte	98.128		
Fluoranthene							
DUP	285.180	mg/kg		nt Detecte		6.4690	
Matrix Spike	304.245	mg/kg	300	nt Detecte	101.42		
Fluorene							
DUP	340.204	mg/kg		nt Detecte		4.6685	
Matrix Spike	324.684	mg/kg	300	nt Detecte	108.23		
Indeno(1,2,3-cd)pyrene							
DUP	305.830	mg/kg		nt Detecte		0.095432	
Matrix Spike	306.122	mg/kg	300	nt Detecte	102.04		
Naphthalene							
DUP	381.843	mg/kg		nt Detecte		9.5894	
Matrix Spike	346.902	mg/kg	300	nt Detecte	115.63		



Division of Environmental Testing

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT

Report Date : 3/12/2024

Report Time : 21:16

REPORT TO

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Pyrene							
DUP	271.716	mg/kg	at Detecte			6.5256	
Matrix Spike	290.045	mg/kg	300 at Detecte	96.682			
AA06533							
1-methylnaphthalene							
MB	Not Detected	mg/kg					
2-methylnaphthalene							
MB	Not Detected	mg/kg					
Acenaphthene							
MB	Not Detected	mg/kg					
Anthracene							
MB	Not Detected	mg/kg					
Benz(a)anthracene							
MB	Not Detected	mg/kg					
Benzo(a)pyrene							
MB	Not Detected	mg/kg					
Benzo(b)fluoranthene							
MB	Not Detected	mg/kg					
Benzo(k)fluoranthene							
MB	Not Detected	mg/kg					
Chrysene							
MB	Not Detected	mg/kg					
Dibenzo(a,h)anthracene							
MB	Not Detected	mg/kg					
Fluoranthene							
MB	Not Detected	mg/kg					
Fluorene							
MB	Not Detected	mg/kg					
Indeno(1,2,3-cd)pyrene							
MB	Not Detected	mg/kg					

**Division of Environmental Testing**

2115 N Scranton St Suite 3040A

Aurora, CO 80045

800-440-5184

FINAL RESULTS REPORT**Report Date :** 3/12/2024**Report Time :** 21:16**REPORT TO**

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Naphthalene							
MB	Not Detected	mg/kg					
Pyrene							
MB	Not Detected	mg/kg					
AA06534							
1-methylnaphthalene							
LCS	372.315	mg/kg	300	124.10			
2-methylnaphthalene							
LCS	373.732	mg/kg	300	124.58			
Acenaphthene							
LCS	364.458	mg/kg	300	121.49			
Anthracene							
LCS	339.709	mg/kg	300	113.24			
Benz(a)anthracene							
LCS	335.984	mg/kg	300	111.99			
Benzo(a)pyrene							
LCS	252.740	mg/kg	300	84.247			
Benzo(b)fluoranthene							
LCS	266.939	mg/kg	300	88.980			
Benzo(k)fluoranthene							
LCS	333.775	mg/kg	300	111.26			
Chrysene							
LCS	297.377	mg/kg	300	99.126			
Dibenzo(a,h)anthracene							
LCS	280.409	mg/kg	300	93.470			
Fluoranthene							
LCS	269.974	mg/kg	300	89.991			
Fluorene							
LCS	330.703	mg/kg	300	110.23			
Indeno(1,2,3-cd)pyrene							



Division of Environmental Testing

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REPORT TO

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
LCS	283.621	mg/kg	300	94.540			
Naphthalene							
LCS	362.972	mg/kg	300	120.99			
Pyrene							
LCS	256.156	mg/kg	300	85.385			
AA06535							
1-methylnaphthalene							
LCS	318.625	mg/kg	300	106.21			
2-methylnaphthalene							
LCS	333.205	mg/kg	300	111.07			
Acenaphthene							
LCS	322.810	mg/kg	300	107.60			
Anthracene							
LCS	296.351	mg/kg	300	98.784			
Benz(a)anthracene							
LCS	334.643	mg/kg	300	111.55			
Benzo(a)pyrene							
LCS	245.147	mg/kg	300	81.716			
Benzo(b)fluoranthene							
LCS	251.828	mg/kg	300	83.943			
Benzo(k)fluoranthene							
LCS	290.120	mg/kg	300	96.707			
Chrysene							
LCS	305.416	mg/kg	300	101.81			
Dibenzo(a,h)anthracene							
LCS	284.911	mg/kg	300	94.970			
Fluoranthene							
LCS	300.734	mg/kg	300	100.24			
Fluorene							
LCS	299.953	mg/kg	300	99.984			

**Division of Environmental Testing**

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Aurora, CO 80045

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1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Indeno(1,2,3-cd)pyrene							
LCS	285.471	mg/kg	300	95.157			
Naphthalene							
LCS	336.956	mg/kg	300	112.32			
Pyrene							
LCS	286.681	mg/kg	300	95.560			
1,2,4-trimethylbenzene							
DUP	0.00876	mg/kg				15.579	
Matrix Spike	0.01024	mg/kg	0.025	40.960			
1,3,5-trimethylbenzene							
DUP	0.00849	mg/kg	<0.00500			15.735	
Matrix Spike	0.00994	mg/kg	0.025	<0.00500	39.760		
Benzene							
DUP	0.03430	mg/kg	<0.00242			3.1991	
Matrix Spike	0.03322	mg/kg	0.025	<0.00242	132.88		
Ethylbenzene							
DUP	0.01788	mg/kg	<0.00500			10.844	
Matrix Spike	0.01993	mg/kg	0.025	<0.00500	79.720		
m&p- xylene							
DUP	0.03532	mg/kg	0.00451			10.743	
Matrix Spike	0.03933	mg/kg	0.050	0.00451	69.640		
o-xylene							
DUP	0.01420	mg/kg	<0.00227			12.107	
Matrix Spike	0.01603	mg/kg	0.025	<0.00227	64.120		
Toluene							
DUP	0.02789	mg/kg	0.00270			4.4180	
Matrix Spike	0.02915	mg/kg	0.025	0.00270	105.80		
Xylenes, total							
DUP	0.04952	mg/kg	<0.00654			11.137	
Matrix Spike	0.05536	mg/kg	0.075	<0.00654	73.813		



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Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
AA06498							
1,2,4-trimethylbenzene							
MB		<0.00245			mg/kg		
1,3,5-trimethylbenzene							
MB		<0.005			mg/kg		
Benzene							
MB		Not Detected			mg/kg		
Ethylbenzene							
MB		<0.005			mg/kg		
m&p- xylene							
MB		<0.00427			mg/kg		
o-xylene							
MB		<0.00227			mg/kg		
Toluene							
MB		<0.00263			mg/kg		
Xylenes, total							
MB		<0.00654			mg/kg		
AA06499							
1,2,4-trimethylbenzene							
LCS		0.04743			mg/kg	0.05	94.860
1,3,5-trimethylbenzene							
LCS		0.04761			mg/kg	0.05	95.220
Benzene							
LCS		0.04255			mg/kg	0.05	85.100
Ethylbenzene							
LCS		0.04341			mg/kg	0.05	86.820
m&p- xylene							
LCS		0.09319			mg/kg	0.1	93.190
o-xylene							
LCS		0.04428			mg/kg	0.05	88.560

**Division of Environmental Testing**

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Aurora, CO 80045

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FINAL RESULTS REPORT**Report Date :** 3/12/2024**Report Time :** 21:16**REPORT TO**

1600 Broadway Ste 1050
Denver, CO 80202
303-929-9513
ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos**Project Name :** Marick A-Z**Project Number :** 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
Toluene							
LCS	0.04536	mg/kg	0.05	90.720			
Xylenes, total							
LCS	0.13747	mg/kg	0.15	91.647			
AA06500							
1,2,4-trimethylbenzene							
LCS	0.04143	mg/kg	0.05	82.860			
1,3,5-trimethylbenzene							
LCS	0.04279	mg/kg	0.05	85.580			
Benzene							
LCS	0.03933	mg/kg	0.05	78.660			
Ethylbenzene							
LCS	0.03976	mg/kg	0.05	79.520			
m&p- xylene							
LCS	0.08232	mg/kg	0.1	82.320			
o-xylene							
LCS	0.04144	mg/kg	0.05	82.880			
Toluene							
LCS	0.04043	mg/kg	0.05	80.860			
Xylenes, total							
LCS	0.12376	mg/kg	0.15	82.507			



Division of Environmental Testing

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REPORT TO

1600 Broadway Ste 1050

Denver, CO 80202

303-929-9513

ryan@petersonenergyoperating.com

Project Manager : Ryan Dornbos

Project Name : Marick A-Z

Project Number : 32117

Sample ID	Customer ID	Analyte Name Analysis Start	Dilution	Result	Units	Reporting Limit	Method Reference
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Qualifier

Explanation

H1	Sample received outside of regulatory holding time.
H2	Sample analyzed outside of regulatory holding time due to a laboratory error.
P1	Sample received outside temperature requirements, 0-6°C.
P2	Sample received unpreserved.
P3	Broken or leaking sample container.
P4	Sample improperly collected
P5	Sample improperly preserved
B	The same analyte is found in the associated blank
B1	Blank failed high, indicating possible high bias in sample results.
B2	Blank failed low, indicating possible low bias in sample results.
MS	Matrix Spike / Matrix Spike Duplicate recovery and/or RPD limit exceeded, indicating potential matrix interference.
QC	Associated batch quality control was outside the acceptable range
D1	Duplicate RPD limit exceeded due to low sample concentration.
D2	Duplicate RPD limit exceeded due to matrix interference.
S	Surrogate recovery failed, indicating potential matrix interference.
RL1	Reporting limits raised due to matrix interference.
RL2	Reporting limits raised due to limited sample.
U	Sample result less than method detection limit.
J	Sample result less than reporting limit but higher than method detection limit.
EST	The concentration indicated has been estimated due to high analyte content
E	Electronic loss or corruption of data.
I	Subcontracted sample



November 02, 2023

Central Operating Inc.

Trisha Fanning

1600 Broadway STE 1050

Denver

CO

80202

Project Name - Marick A-2

Project Number - 31790

Attached are your analytical results for Marick A-2 received by Origins Laboratory, Inc. October 19, 2023. This project is associated with Origins project number Y310559-01.

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

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

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

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

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

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



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

Central Operating Inc.

1600 Broadway STE 1050

Denver CO 80202

Trisha Fanning

Project Number: 31790

Project: Marick A-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Background 1	Y310559-01	Soil	October 19, 2023 11:20	10/19/2023 17:45
Background 2	Y310559-02	Soil	October 19, 2023 11:00	10/19/2023 17:45
FL@TREATER 4'	Y310559-03	Soil	October 19, 2023 15:30	10/19/2023 17:45
WELL HEAD 4'	Y310559-04	Soil	October 19, 2023 12:45	10/19/2023 17:45

Origins Laboratory, Inc.



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

Central Operating Inc.

1600 Broadway STE 1050

Denver CO 80202

Trisha Fanning

Project Number: 31790

Project: Marick A-2

www.originslaboratory.com

4310559

page | of |

ORIGINS
LABORATORY, INC

Client: CENTRAL OPERATING INC
Project Manager: TRISHA FANNING
Address: 1600 BROADWAY STE 1050
Project Name: MARICK A-2
DENVER CO 80202
Project Number: 31790
Telephone Number: 303 929 9513
Samples Collected By: RYAN DANBOS
Email Address: CEN@DENVERPRODUCTION.COM

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #		Other
BACKGROUND 1	10/19/23	1120	3									1
BACKGROUND 2	10/19/23	1100	3									2
FL @ TREAT 4'	10/19/23	1530	3									3
WELL HEAD 4'	10/19/23	1245	3									4
												5
												6
												7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
Ryan Danbos	10/19/23	1745	Trisha Fanning	10/19/23	1745	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard

Date Results Needed

Temp Received- 10/19/23

Origins Laboratory, Inc.

J. Bynon

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.

Central Operating Inc.

1600 Broadway STE 1050

Denver CO 80202

Trisha Fanning

Project Number: 31790

Project: Marick A-2

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4310559

Client: Central Operating

Client Project ID: Marick A-2

Checklist Completed by: EHS

Shipped Via: HD

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

Date/time completed: 10/19/23

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 13 °C _____ / _____ °C _____ / _____ °C (Describe)

Thermometer ID: 1004

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

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

Reviewed by (Project Manager) [Signature]

10/23/23
Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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Central Operating Inc.
1600 Broadway STE 1050
Denver CO 80202

Trisha Fanning
Project Number: 31790
Project: Marick A-2

FL@TREATER 4'
10/19/2023 3:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y310559-03 (Soil)

Boron (DTPA Sorbitol)

Boron	1.67	0.102	mg/L	1	B3J2515	10/25/2023	10/26/2023
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	79.4	25.0	mg/kg	1	B3J2402	10/24/2023	10/26/2023
Residual Range Organics (C28-C40)	184	100	"	"	"	"	"

Surrogate: o-Terphenyl	100 %	50-150	"	"	"
------------------------	-------	--------	---	---	---

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3J2035	10/20/2023	10/22/2023	Ua
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Benzene	ND	0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Toluene	ND	0.00200	"	"	"	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130	"	"	"
Surrogate: Toluene-d8	95.0 %	70-130	"	"	"

Origins Laboratory, Inc.



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Central Operating Inc.
1600 Broadway STE 1050
Denver CO 80202

Trisha Fanning
Project Number: 31790
Project: Marick A-2

FL@TREATER 4'
10/19/2023 3:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y310559-03 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene	95.3 %	70-130	B3J20 35	10/20/2023	10/22/2023
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Metals by Saturated Paste by EPA 6010

Calcium	2.16	0.499	meq/L	10	[CALC]	10/25/2023	10/26/2023
Magnesium	0.938	0.823	"	"	"	"	"
Sodium	2.08	0.435	"	"	"	"	"

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B3J2327	10/23/2023	10/30/2023	Ua
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	Ua
Acenaphthene	ND	0.020	"	"	"	"	"	Ua
Anthracene	ND	0.020	"	"	"	"	"	Ua
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	Ua
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	Ua
Chrysene	ND	0.020	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	Ua
Fluoranthene	ND	0.020	"	"	"	"	"	Ua
Fluorene	ND	0.020	"	"	"	"	"	Ua

Origins Laboratory, Inc.



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Central Operating Inc.
1600 Broadway STE 1050
Denver CO 80202

Trisha Fanning
Project Number: 31790
Project: Marick A-2

FL@TREATER 4'
10/19/2023 3:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y310559-03 (Soil)

PAH by EPA 8270E

Indeno (1,2,3-cd) pyrene	ND	0.020	mg/kg	1	B3J2327	10/23/2023	10/30/2023	Ua
Naphthalene	ND	0.002	"	"	"	"	"	Ua
Pyrene	ND	0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	98.1 %	60-130	"	"	"
Surrogate: Anthracene-d10	101 %	60-130	"	"	"
Surrogate: Pyrene-d10	103 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	99.0 %	60-130	"	"	"

pH in Soil by 9045D

pH	8.17	pH Units	1	B3J2518	10/25/2023	10/26/2023
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SAR by 20B Saturated Paste

SAR	1.67	0.0100	SAR	1	B3J2511	10/25/2023	10/26/2023
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.733	0.00500	mmhos/cm	1	B3J2518	10/25/2023	10/26/2023
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Table 915 metals by EPA 6020B

Arsenic	5.38	0.0927	mg/kg	10	B3J2018	10/20/2023	10/24/2023
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Central Operating Inc.
1600 Broadway STE 1050
Denver CO 80202

Trisha Fanning
Project Number: 31790
Project: Marick A-2

FL@TREATER 4'

10/19/2023 3:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y310559-03 (Soil)

Table 915 metals by EPA 6020B

Barium	760	9.27	mg/kg	10	B3J2018	10/20/2023	10/24/2023
Cadmium	0.198	0.0927	"	"	"	"	"
Copper	12.4	9.27	"	"	"	"	"
Lead	10.3	9.27	"	"	"	"	"
Nickel	12.3	9.27	"	"	"	"	"
Selenium	0.177	0.0927	"	"	"	"	"
Silver	ND	0.0927	"	"	"	"	"
Zinc	ND	92.7	"	"	"	"	"

Total Metals by 7196A

Hexavalent Chromium	ND	0.163	0.407	mg/kg dry	1	2515994	10/28/2023	11/01/2023	U
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Central Operating Inc.
1600 Broadway STE 1050
Denver CO 80202

Trisha Fanning
Project Number: 31790
Project: Marick A-2

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3J2035 - EPA 5030 (soil)										
Blank (B3J2035-BLK1)					Prepared: 10/20/2023 Analyzed: 10/22/2023					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							Ua
1,3,5-Trimethylbenzene	ND	0.00200	"							Ua
Benzene	ND	0.00200	"							Ua
Ethylbenzene	ND	0.00200	"							Ua
Naphthalene	ND	0.00380	"							Ua
Toluene	ND	0.00200	"							Ua
Xylenes, total	ND	0.00200	"							Ua
Gasoline Range Hydrocarbons	ND	0.200	"							Ua
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.1	70-130			

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Trisha Fanning
Project Number: 31790
Project: Marick A-2

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3J2035 - EPA 5030 (soil)										
LCS (B3J2035-BS1)					Prepared: 10/20/2023 Analyzed: 10/22/2023					
1,2,4-Trimethylbenzene	0.0856	0.00200	mg/kg	0.100		85.6	70-130			
1,3,5-Trimethylbenzene	0.0847	0.00200	"	0.100		84.7	70-130			
Benzene	0.0935	0.00200	"	0.100		93.5	70-130			
Ethylbenzene	0.0887	0.00200	"	0.100		88.7	70-130			
Naphthalene	0.0861	0.00380	"	0.100		86.1	70-130			
Toluene	0.0851	0.00200	"	0.100		85.1	70-130			
o-Xylene	0.0874	0.00200	"	0.100		87.4	70-130			
m,p-Xylene	0.171	0.00400	"	0.200		85.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Project: Marick A-2

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3J2035 - EPA 5030 (soil)										
Matrix Spike (B3J2035-MS1)		Source: Y310555-01			Prepared: 10/20/2023 Analyzed: 10/22/2023					
1,2,4-Trimethylbenzene	0.109	0.00200	mg/kg	0.100	ND	109	70-130			
1,3,5-Trimethylbenzene	0.107	0.00200	"	0.100	ND	107	70-130			
Benzene	0.116	0.00200	"	0.100	ND	116	70-130			
Ethylbenzene	0.110	0.00200	"	0.100	ND	110	70-130			
Naphthalene	0.108	0.00380	"	0.100	ND	108	70-130			
Toluene	0.105	0.00200	"	0.100	ND	105	70-130			
o-Xylene	0.109	0.00200	"	0.100	ND	109	70-130			
m,p-Xylene	0.213	0.00400	"	0.200	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

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Trisha Fanning
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Project: Marick A-2

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3J2035 - EPA 5030 (soil)										
Matrix Spike Dup (B3J2035-MSD1)		Source: Y310555-01			Prepared: 10/20/2023 Analyzed: 10/22/2023					
1,2,4-Trimethylbenzene	0.110	0.00200	mg/kg	0.100	ND	110	70-130	1.35	20	
1,3,5-Trimethylbenzene	0.107	0.00200	"	0.100	ND	107	70-130	0.579	20	
Benzene	0.120	0.00200	"	0.100	ND	120	70-130	2.63	20	
Ethylbenzene	0.112	0.00200	"	0.100	ND	112	70-130	2.36	20	
Naphthalene	0.114	0.00380	"	0.100	ND	114	70-130	5.39	20	
Toluene	0.107	0.00200	"	0.100	ND	107	70-130	1.99	20	
o-Xylene	0.111	0.00200	"	0.100	ND	111	70-130	2.04	20	
m,p-Xylene	0.218	0.00400	"	0.200	ND	109	70-130	2.36	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

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

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3J2402 - EPA 3550B										
Blank (B3J2402-BLK1)					Prepared: 10/24/2023 Analyzed: 10/25/2023					
Diesel (C10-C28)	ND	25.0	mg/kg							Ua
Residual Range Organics (C28-C40)	ND	100	"							Ua
Surrogate: o-Terphenyl	24		"	24.9		97.9	50-150			

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Project: Marick A-2

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3J2402 - EPA 3550B										
LCS (B3J2402-BS1)					Prepared: 10/24/2023 Analyzed: 10/25/2023					
Diesel (C10-C28)	1110	50.0	mg/kg	1000		111	70-130			
Residual Range Organics (C28-C40)	872	200	"	1000		87.2	70-130			
Surrogate: o-Terphenyl	55		"	49.8		110	50-150			

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Trisha Fanning
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Project: Marick A-2

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3J2402 - EPA 3550B										
Matrix Spike (B3J2402-MS1)		Source: Y310553-01			Prepared: 10/24/2023 Analyzed: 10/25/2023					
Diesel (C10-C28)	1170	50.0	mg/kg	1000	ND	117	70-130			
Residual Range Organics (C28-C40)	944	200	"	1000	ND	94.4	70-130			
Surrogate: o-Terphenyl	55		"	49.8		111	50-150			

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Project: Marick A-2

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3J2402 - EPA 3550B										
Matrix Spike Dup (B3J2402-MSD1)			Source: Y310553-01		Prepared: 10/24/2023 Analyzed: 10/25/2023					
Diesel (C10-C28)	983	50.0	mg/kg	1000	ND	98.3	70-130	17.5	35	
Residual Range Organics (C28-C40)	769	200	"	1000	ND	76.9	70-130	20.4	35	
Surrogate: o-Terphenyl	47		"	49.8		94.3	50-150			

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Project: Marick A-2

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Metals by EPA 6000/7000 Series Methods - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3J2018 - EPA 3050B

Blank (B3J2018-BLK1)

Prepared: 10/20/2023 Analyzed: 10/24/2023

Arsenic	ND	0.000100	mg/kg
Barium	ND	0.0100	"
Cadmium	ND	0.000100	"
Copper	ND	0.0100	"
Lead	ND	0.0100	"
Nickel	ND	0.0100	"
Selenium	ND	0.000100	"
Silver	ND	0.000100	"
Zinc	ND	0.100	"

LCS (B3J2018-BS1)

Prepared: 10/20/2023 Analyzed: 10/24/2023

Arsenic	0.0520	0.000100	mg/kg	0.0500	104	80-120
Barium	5.22	0.0100	"	5.00	104	80-120
Cadmium	0.0506	0.000100	"	0.0500	101	80-120
Copper	0.533	0.0100	"	0.500	107	80-120
Lead	0.0500	0.0100	"	0.0500	100	80-120
Nickel	0.0521	0.0100	"	0.0500	104	80-120
Selenium	0.0476	0.000100	"	0.0500	95.2	80-120
Silver	0.0525	0.000100	"	0.0500	105	80-120
Zinc	0.518	0.100	"	0.500	104	80-120

Matrix Spike (B3J2018-MS1)

Source: Y310124-02

Prepared: 10/20/2023 Analyzed: 10/24/2023

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Project Number: 31790
Project: Marick A-2

Metals by EPA 6000/7000 Series Methods - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3J2018 - EPA 3050B

Matrix Spike (B3J2018-MS1)		Source: Y310124-02			Prepared: 10/20/2023 Analyzed: 10/24/2023					
Arsenic	6.46	0.0918	mg/kg	4.59	1.88	99.7	75-125			
Barium	545	9.18	"	459	68.0	104	75-125			
Cadmium	4.84	0.0918	"	4.59	0.0953	103	75-125			
Copper	54.2	9.18	"	45.9	6.38	104	75-125			
Lead	9.18	9.18	"	4.59	5.16	87.5	75-125			
Nickel	9.44	9.18	"	4.59	5.19	92.5	75-125			
Selenium	4.39	0.0918	"	4.59	0.0694	94.2	75-125			
Silver	4.95	0.0918	"	4.59	0.0285	107	75-125			
Zinc	70.7	91.8	"	45.9	27.1	94.9	75-125			
Matrix Spike Dup (B3J2018-MSD1)		Source: Y310124-02			Prepared: 10/20/2023 Analyzed: 10/24/2023					
Arsenic	6.79	0.0953	mg/kg	4.76	1.88	103	75-125	5.03	20	
Barium	583	9.53	"	476	68.0	108	75-125	6.78	20	
Cadmium	5.10	0.0953	"	4.76	0.0953	105	75-125	5.32	20	
Copper	57.1	9.53	"	47.6	6.38	106	75-125	5.16	20	
Lead	9.39	9.53	"	4.76	5.16	88.6	75-125	2.21	20	
Nickel	9.61	9.53	"	4.76	5.19	92.7	75-125	1.81	20	
Selenium	4.63	0.0953	"	4.76	0.0694	95.6	75-125	5.23	20	
Silver	5.24	0.0953	"	4.76	0.0285	109	75-125	5.72	20	
Zinc	74.3	95.3	"	47.6	27.1	99.1	75-125	5.04	20	

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Trisha Fanning
Project Number: 31790
Project: Marick A-2

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3J2327 - EPA 3580

Blank (B3J2327-BLK1)

Prepared: 10/23/2023 Analyzed: 10/30/2023

1-Methylnaphthalene	ND	0.002	mg/kg							Ua
2-Methylnaphthalene	ND	0.002	"							Ua
Acenaphthene	ND	0.020	"							Ua
Anthracene	ND	0.020	"							Ua
Benzo (a) anthracene	ND	0.005	"							Ua
Benzo (a) pyrene	ND	0.020	"							Ua
Benzo (b) fluoranthene	ND	0.020	"							Ua
Benzo (g,h,i) perylene	ND	0.020	"							Ua
Benzo (k) fluoranthene	ND	0.020	"							Ua
Chrysene	ND	0.020	"							Ua
Dibenz (a,h) anthracene	ND	0.020	"							Ua
Fluoranthene	ND	0.020	"							Ua
Fluorene	ND	0.020	"							Ua
Indeno (1,2,3-cd) pyrene	ND	0.020	"							Ua
Naphthalene	ND	0.002	"							Ua
Phenanthrene	ND	0.020	"							Ua
Pyrene	ND	0.020	"							Ua

Surrogate: Fluorene-d10	190		ug/kg	200		97.4	60-130
Surrogate: Anthracene-d10	180		"	200		90.2	60-130
Surrogate: Pyrene-d10	220		"	200		109	60-130
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.9	60-130

LCS (B3J2327-BS1)

Prepared: 10/23/2023 Analyzed: 10/30/2023

1-Methylnaphthalene	0.189	0.002	mg/kg	0.200		94.6	70-130
2-Methylnaphthalene	0.194	0.002	"	0.200		97.2	70-130
Acenaphthene	0.197	0.020	"	0.200		98.4	70-130
Anthracene	0.194	0.020	"	0.200		96.9	70-130

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Trisha Fanning
Project Number: 31790
Project: Marick A-2

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3J2327 - EPA 3580

LCS (B3J2327-BS1)

Prepared: 10/23/2023 Analyzed: 10/30/2023

Benzo (a) anthracene	0.205	0.005	mg/kg	0.200		102	70-130
Benzo (a) pyrene	0.196	0.020	"	0.200		98.1	70-130
Benzo (b) fluoranthene	0.193	0.020	"	0.200		96.7	70-130
Benzo (g,h,i) perylene	0.190	0.020	"	0.200		94.9	70-130
Benzo (k) fluoranthene	0.205	0.020	"	0.200		102	70-130
Chrysene	0.219	0.020	"	0.200		110	70-130
Dibenz (a,h) anthracene	0.224	0.020	"	0.200		112	70-130
Fluoranthene	0.183	0.020	"	0.200		91.6	70-130
Fluorene	0.199	0.020	"	0.200		99.7	70-130
Indeno (1,2,3-cd) pyrene	0.193	0.020	"	0.200		96.3	70-130
Naphthalene	0.191	0.002	"	0.200		95.5	70-130
Phenanthrene	0.187	0.020	"	0.200		93.3	70-130
Pyrene	0.223	0.020	"	0.200		112	70-130
Surrogate: Fluorene-d10	200		ug/kg	200		97.8	60-130
Surrogate: Anthracene-d10	180		"	200		90.6	60-130
Surrogate: Pyrene-d10	210		"	200		105	60-130
Surrogate: Benzo (a) pyrene-d12	190		"	200		94.4	60-130

Matrix Spike (B3J2327-MS1)

Source: Y310553-01

Prepared: 10/23/2023 Analyzed: 10/30/2023

1-Methylnaphthalene	0.192	0.002	mg/kg	0.200	0.003	94.1	70-130
2-Methylnaphthalene	0.195	0.002	"	0.200	0.007	93.9	70-130
Acenaphthene	0.206	0.020	"	0.200	0.001	102	70-130
Anthracene	0.199	0.020	"	0.200	ND	99.4	70-130
Benzo (a) anthracene	0.198	0.005	"	0.200	0.002	98.1	70-130
Benzo (a) pyrene	0.235	0.020	"	0.200	ND	118	70-130
Benzo (b) fluoranthene	0.186	0.020	"	0.200	0.0005	92.6	70-130
Benzo (g,h,i) perylene	0.175	0.020	"	0.200	0.003	85.8	70-130

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Central Operating Inc.
1600 Broadway STE 1050
Denver CO 80202

Trisha Fanning
Project Number: 31790
Project: Marick A-2

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3J2327 - EPA 3580

Matrix Spike (B3J2327-MS1)		Source: Y310553-01			Prepared: 10/23/2023 Analyzed: 10/30/2023					
Benzo (k) fluoranthene	0.225	0.020	mg/kg	0.200	0.002	112	70-130			
Chrysene	0.248	0.020	"	0.200	ND	124	70-130			
Dibenz (a,h) anthracene	0.222	0.020	"	0.200	ND	111	70-130			
Fluoranthene	0.255	0.020	"	0.200	0.0009	127	70-130			
Fluorene	0.218	0.020	"	0.200	0.002	108	70-130			
Indeno (1,2,3-cd) pyrene	0.192	0.020	"	0.200	ND	96.1	70-130			
Naphthalene	0.192	0.002	"	0.200	0.001	95.5	70-130			
Phenanthrene	0.195	0.020	"	0.200	0.004	95.4	70-130			
Pyrene	0.207	0.020	"	0.200	0.003	102	70-130			
Surrogate: Fluorene-d10	220		ug/kg	200		108	60-130			
Surrogate: Anthracene-d10	200		"	200		97.8	60-130			
Surrogate: Pyrene-d10	200		"	200		98.0	60-130			
Surrogate: Benzo (a) pyrene-d12	230		"	200		113	60-130			

Matrix Spike Dup (B3J2327-MSD1)		Source: Y310553-01			Prepared: 10/23/2023 Analyzed: 10/30/2023					
1-Methylnaphthalene	0.180	0.002	mg/kg	0.200	0.003	88.3	70-130	6.32	20	
2-Methylnaphthalene	0.188	0.002	"	0.200	0.007	90.3	70-130	3.77	20	
Acenaphthene	0.201	0.020	"	0.200	0.001	99.9	70-130	2.30	20	
Anthracene	0.204	0.020	"	0.200	ND	102	70-130	2.68	20	
Benzo (a) anthracene	0.205	0.005	"	0.200	0.002	102	70-130	3.61	20	
Benzo (a) pyrene	0.227	0.020	"	0.200	ND	114	70-130	3.52	20	
Benzo (b) fluoranthene	0.203	0.020	"	0.200	0.0005	101	70-130	8.83	20	
Benzo (g,h,i) perylene	0.185	0.020	"	0.200	0.003	90.9	70-130	5.73	20	
Benzo (k) fluoranthene	0.224	0.020	"	0.200	0.002	111	70-130	0.633	20	
Chrysene	0.247	0.020	"	0.200	ND	123	70-130	0.478	20	
Dibenz (a,h) anthracene	0.249	0.020	"	0.200	ND	124	70-130	11.2	20	
Fluoranthene	0.224	0.020	"	0.200	0.0009	112	70-130	12.8	20	

Origins Laboratory, Inc.



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Central Operating Inc.
1600 Broadway STE 1050
Denver CO 80202

Trisha Fanning
Project Number: 31790
Project: Marick A-2

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3J2327 - EPA 3580

Matrix Spike Dup (B3J2327-MSD1)		Source: Y310553-01			Prepared: 10/23/2023 Analyzed: 10/30/2023					
Fluorene	0.200	0.020	mg/kg	0.200	0.002	99.4	70-130	8.48	20	
Indeno (1,2,3-cd) pyrene	0.208	0.020	"	0.200	ND	104	70-130	8.10	20	
Naphthalene	0.184	0.002	"	0.200	0.001	91.4	70-130	4.39	20	
Phenanthrene	0.207	0.020	"	0.200	0.004	102	70-130	6.21	20	
Pyrene	0.191	0.020	"	0.200	0.003	93.9	70-130	8.42	20	
Surrogate: Fluorene-d10	190		ug/kg	200		95.3	60-130			
Surrogate: Anthracene-d10	200		"	200		102	60-130			
Surrogate: Pyrene-d10	180		"	200		91.0	60-130			
Surrogate: Benzo (a) pyrene-d12	230		"	200		115	60-130			

Origins Laboratory, Inc.



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Central Operating Inc.
1600 Broadway STE 1050
Denver CO 80202

Trisha Fanning
Project Number: 31790
Project: Marick A-2

Classical Chemistry Parameters - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3J2511 - Saturated Paste Metals

Blank (B3J2511-BLK1)

Prepared: 10/25/2023 Analyzed: 10/26/2023

SAR	ND	0.0100	SAR
Calcium PPM	ND	10.0	mg/L
Magnesium PPM	ND	10.0	"
Sodium PPM	ND	10.0	"

Duplicate (B3J2511-DUP1)

Source: Y310558-05

Prepared: 10/25/2023 Analyzed: 10/26/2023

SAR	ND	0.0100	SAR	1.96		200
Calcium PPM	15.2	10.0	mg/L	15.6	2.40	50
Magnesium PPM	2.52	10.0	"	2.52	0.00	50
Sodium PPM	32.9	10.0	"	31.6	3.97	50

Batch B3J2514 - DTPA Sorbitol Preparation

Blank (B3J2514-BLK1)

Prepared: 10/25/2023 Analyzed: 10/26/2023

Boron	ND	0.100	mg/L
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Duplicate (B3J2514-DUP1)

Source: Y310549-01

Prepared: 10/25/2023 Analyzed: 10/26/2023

Boron	0.760	0.101	mg/L	ND		50
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Batch B3J2515 - DTPA Sorbitol Preparation

Blank (B3J2515-BLK1)

Prepared: 10/25/2023 Analyzed: 10/26/2023

Boron	ND	0.100	mg/L
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Duplicate (B3J2515-DUP1)

Source: Y310559-02

Prepared: 10/25/2023 Analyzed: 10/26/2023

Boron	0.415	0.101	mg/L	0.413	0.426	50
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Origins Laboratory, Inc.



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Central Operating Inc.
1600 Broadway STE 1050
Denver CO 80202

Trisha Fanning
Project Number: 31790
Project: Marick A-2

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3J2518 - Saturated Paste pH/EC										
Blank (B3J2518-BLK1)					Prepared: 10/25/2023 Analyzed: 10/26/2023					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
Duplicate (B3J2518-DUP1)					Source: Y310558-05 Prepared: 10/25/2023 Analyzed: 10/26/2023					
pH	8.23		pH Units		8.23			0.00	25	
Specific Conductance (EC)	0.340	0.00500	mmhos/cm		0.366			7.40	25	

Origins Laboratory, Inc.



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Central Operating Inc.
1600 Broadway STE 1050
Denver CO 80202

Trisha Fanning
Project Number: 31790
Project: Marick A-2

Total Metals by 7196A - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2515994 - SW846 3060A										
BLANK (1205559634-BLK)					Prepared: 10/28/2023 Analyzed: 11/01/2023					
Hexavalent Chromium	ND	0.399	mg/kg				-			U
LCS (1205559635-BKS)					Prepared: 10/28/2023 Analyzed: 11/01/2023					
Hexavalent Chromium	3.88	0.390	mg/kg	3.90		99.3	80-120			
DUP (1205559638 D)					Prepared: 10/28/2023 Analyzed: 11/01/2023					
Source: 642275001										
Hexavalent Chromium	ND	0.318	mg/kg dry		<0.127		0-50	N/A	50	U
MS (1205559639 S)					Prepared: 10/28/2023 Analyzed: 11/01/2023					
Source: 642275001										
Hexavalent Chromium	2.60	0.318	mg/kg dry	3.18	<0.127	81.8	75-125			
ILCS (1205559640-ILCS)					Prepared: 10/28/2023 Analyzed: 11/01/2023					
Hexavalent Chromium	7.48	0.375	mg/kg	7.67		97.5	80-120			

Origins Laboratory, Inc.



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Central Operating Inc.
1600 Broadway STE 1050
Denver CO 80202

Trisha Fanning
Project Number: 31790
Project: Marick A-2

Notes and Definitions

Ua Sample is Non-Detect.

U Result not detected above the detection limit

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Calculated results may use J-flag data (instead of reported "ND") as part of calculation to provide a more accurate result.

Origins Laboratory, Inc.



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Marick 1-A Pit & Facilities
Facility ID: 117567 & 117568 (Pits) & 317092 (Location)
Remediation # 32117
Central Operating Company



PHOTO LOG

8/28/24 Marick 1-A
39.825839, -103.184827
Central Operating



Marick 1-A Field Sample Photo logs

Title/Sample ID	NPW9 @ 4' & 6'
 <p>A photograph of two clear Ziploc bags filled with soil samples, placed on the ground in a field of green vegetation. The bag on the left is labeled "LOC NPW9" and "P1035". The bag on the right is labeled "LOC NPW9" and "P1037". A timestamp "2024/08/28 12:43:43" is visible in the bottom right corner of the photo.</p>	

8/28/24 Marick 1-A
39.825839, -103.184827
Central Operating



8/28/24 Marick 1-A
39.825839, -103.184827
Central Operating



8/28/24 Marick 1-A
39.825839, -103.184827
Central Operating



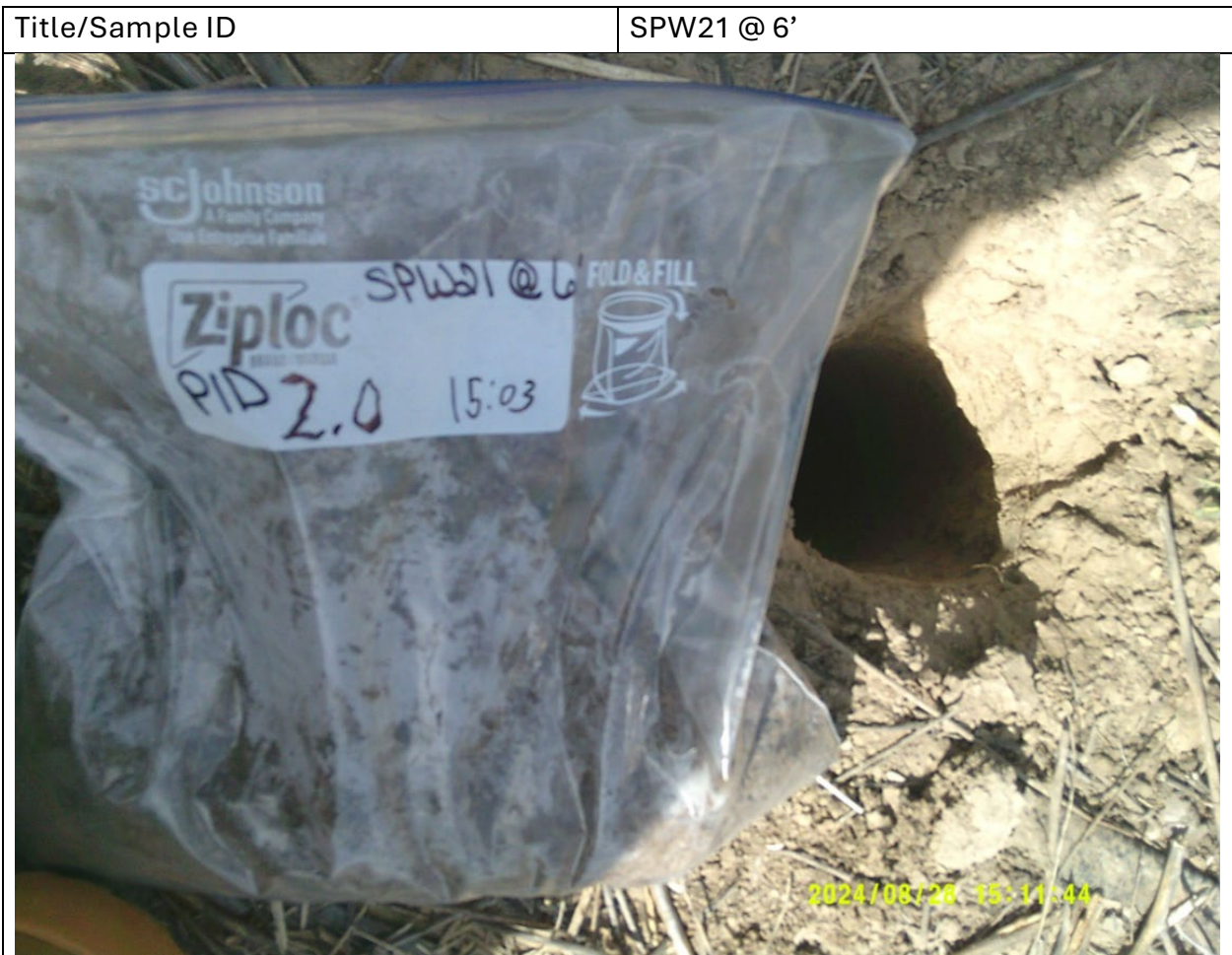
8/28/24 Marick 1-A
39.825839, -103.184827
Central Operating



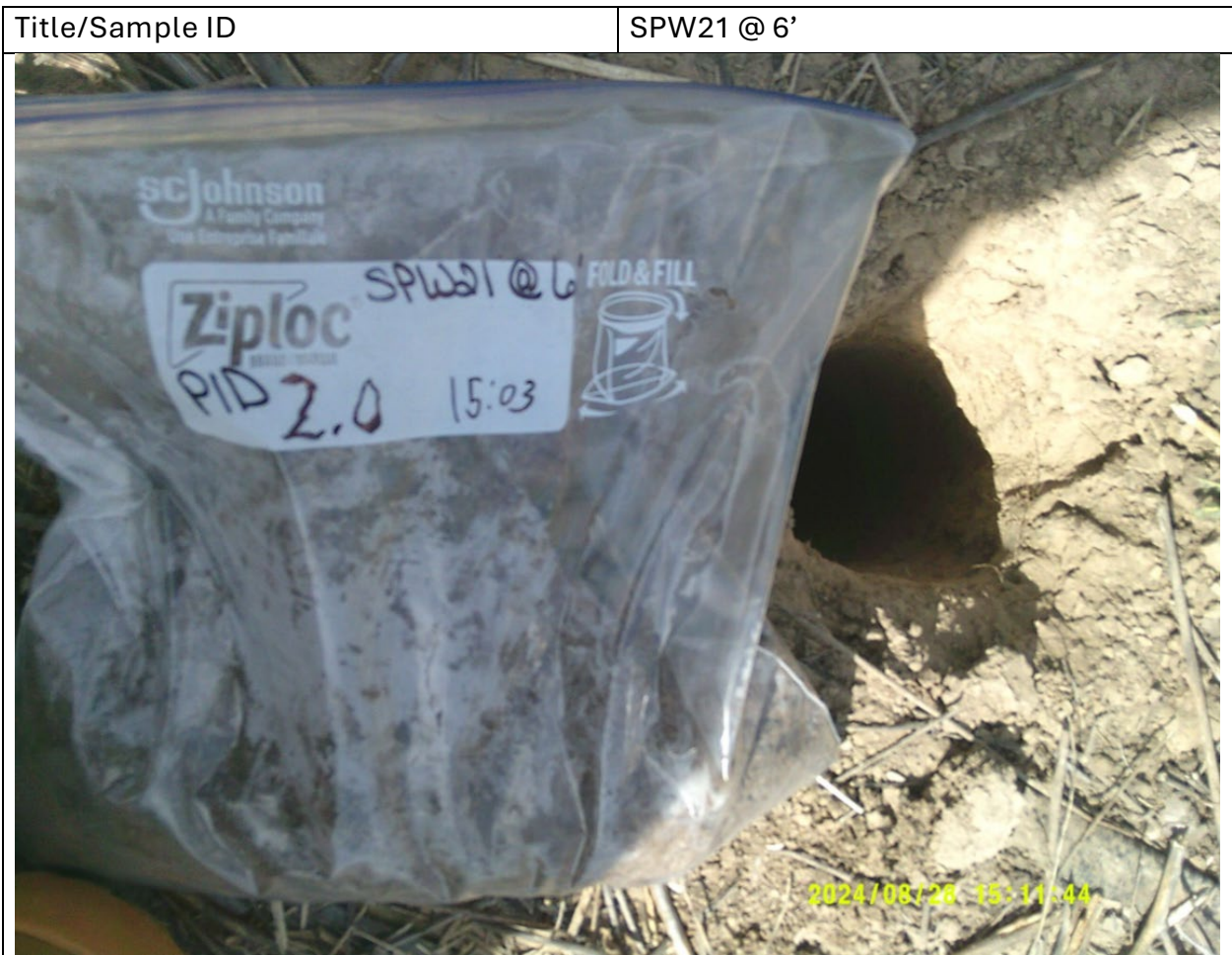
8/28/24 Marick 1-A
39.825839, -103.184827
Central Operating



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8/28/24 Marick 1-A
39.825839, -103.184827
Central Operating



8/28/24 Marick 1-A
39.825839, -103.184827
Central Operating



Central Operating, Inc.

Marick A-1

SENE SECTION 3 T3N R52W

WASHINGTON COUNTY, CO

PHOTO LOG

Tank location After Removal – Facing East



East Tank Sample Location



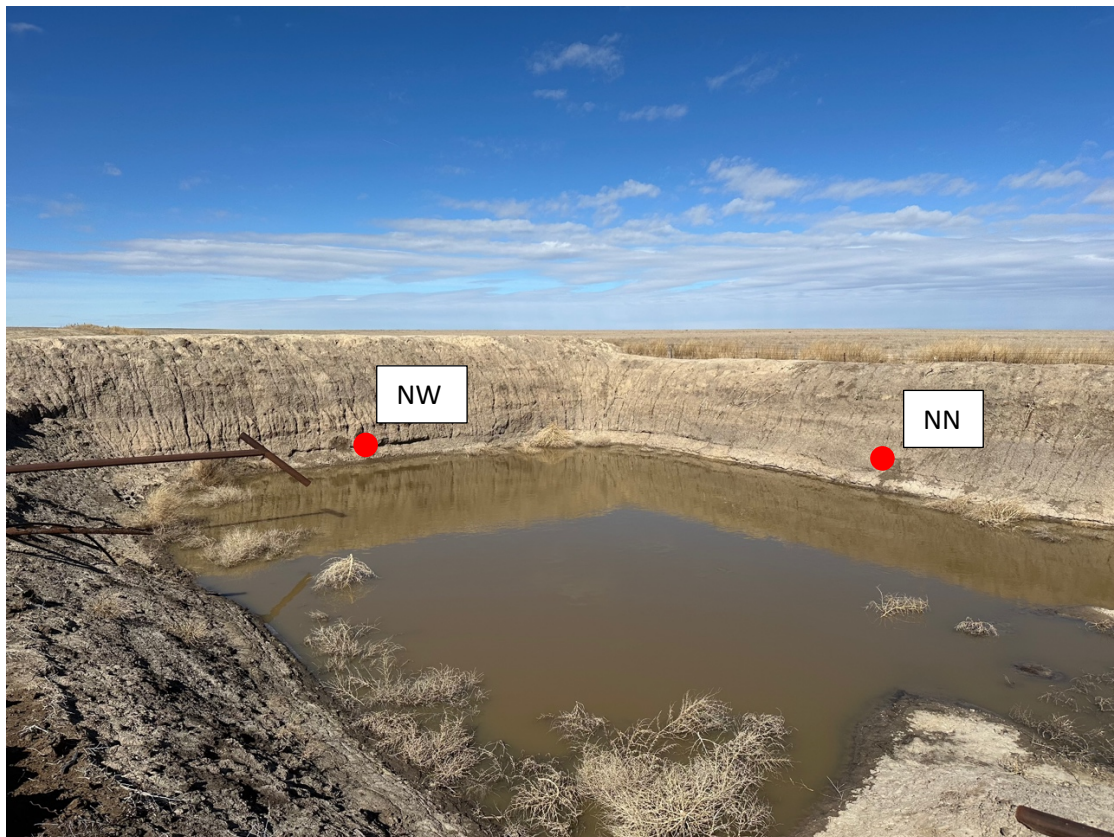
Center Tank Sample Location



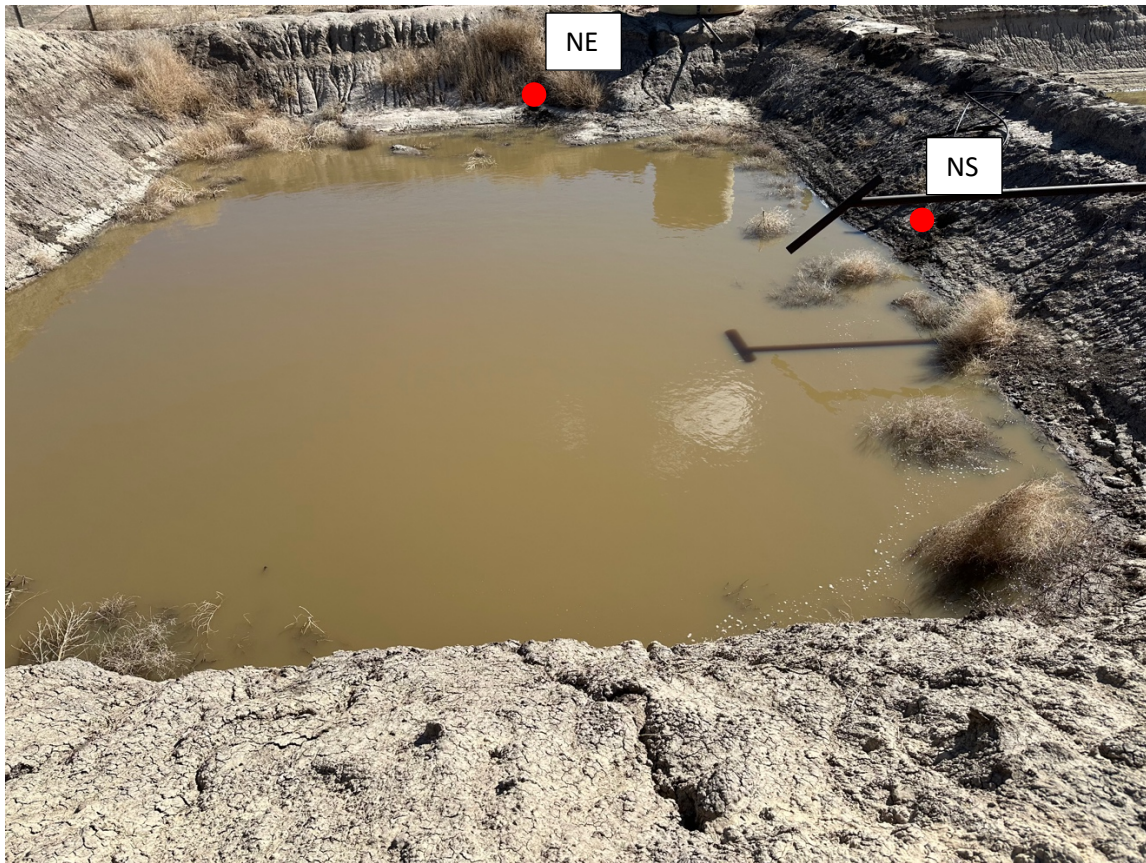
West Tank Sample



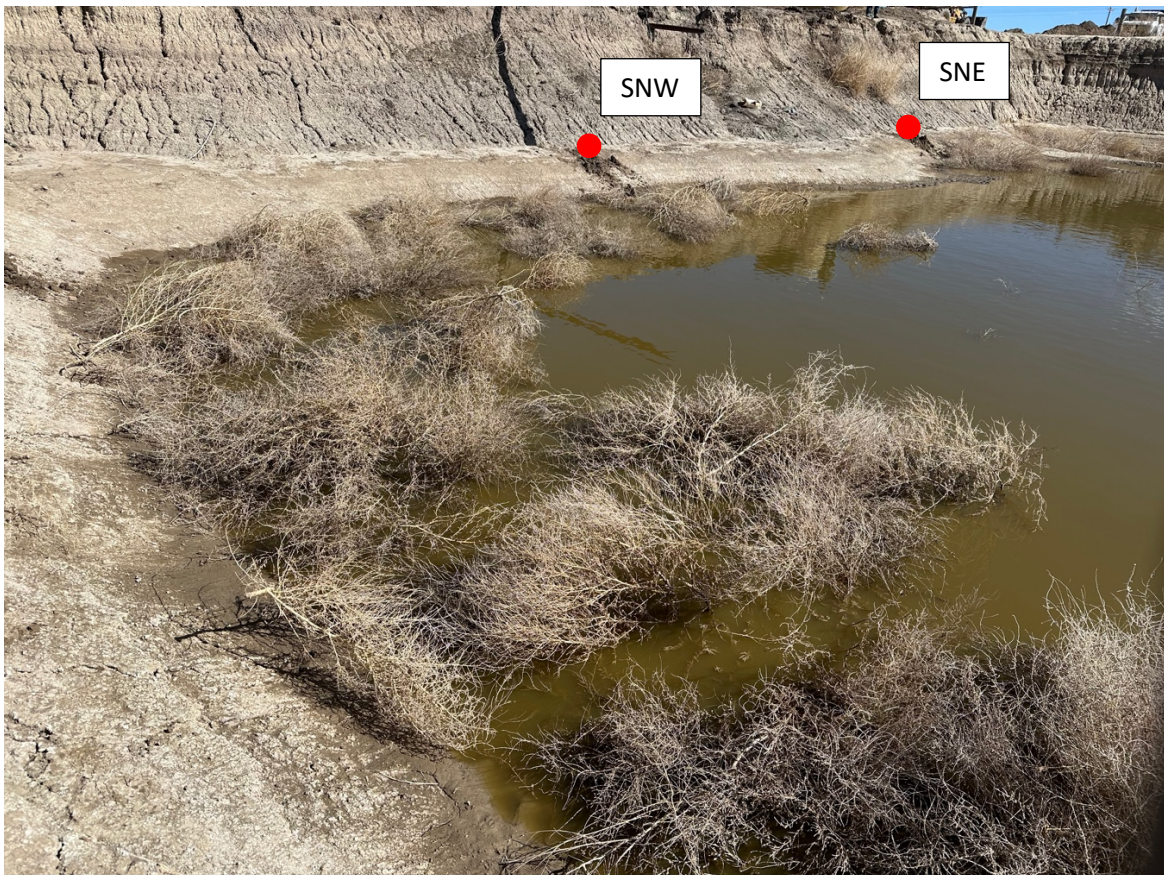
North Pit Facing Northwest



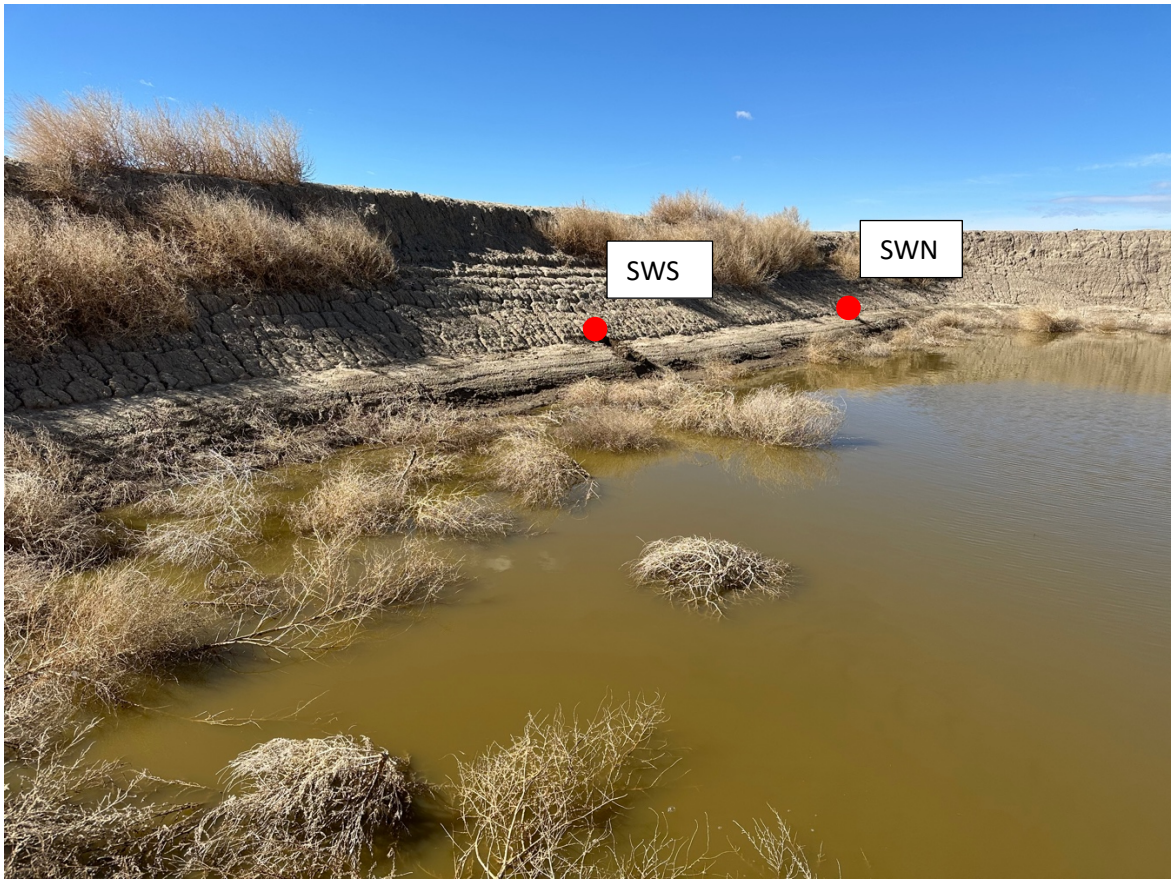
North Pit Facing East



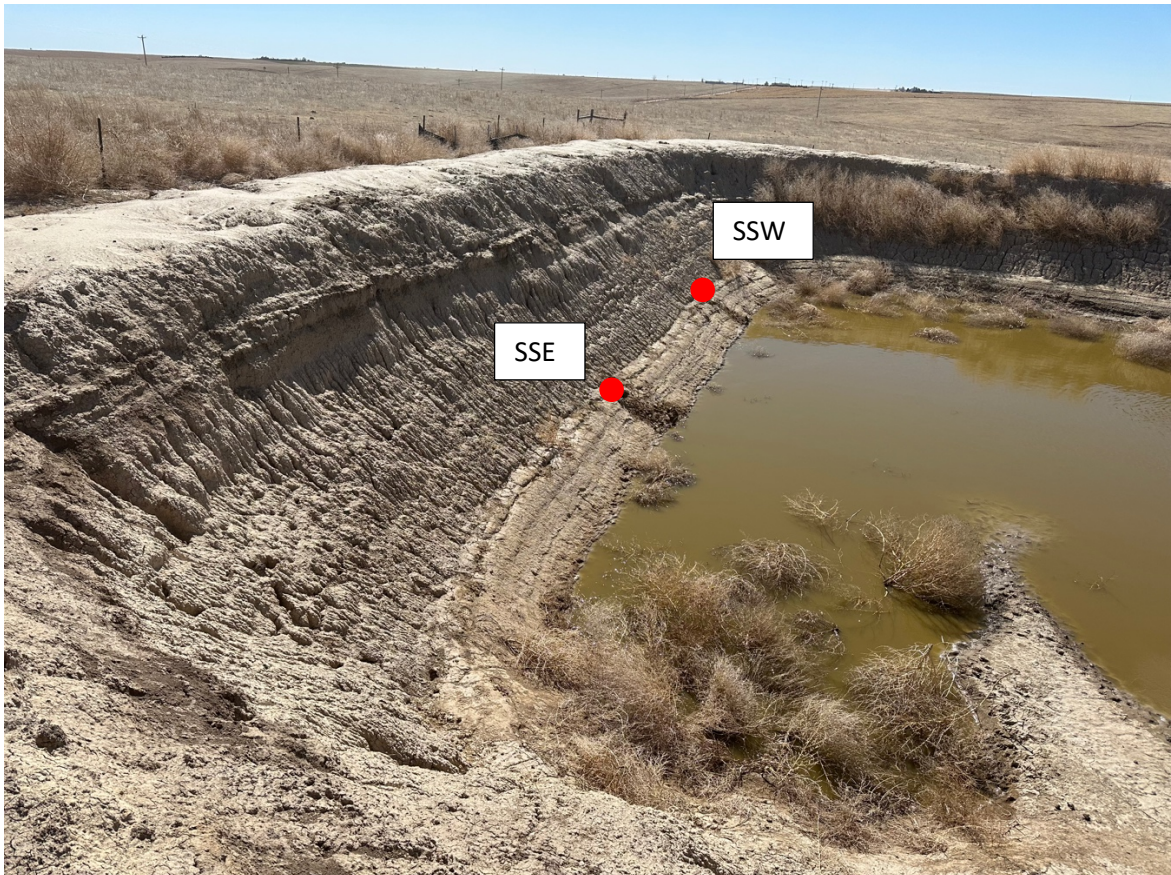
South Pit Facing NE



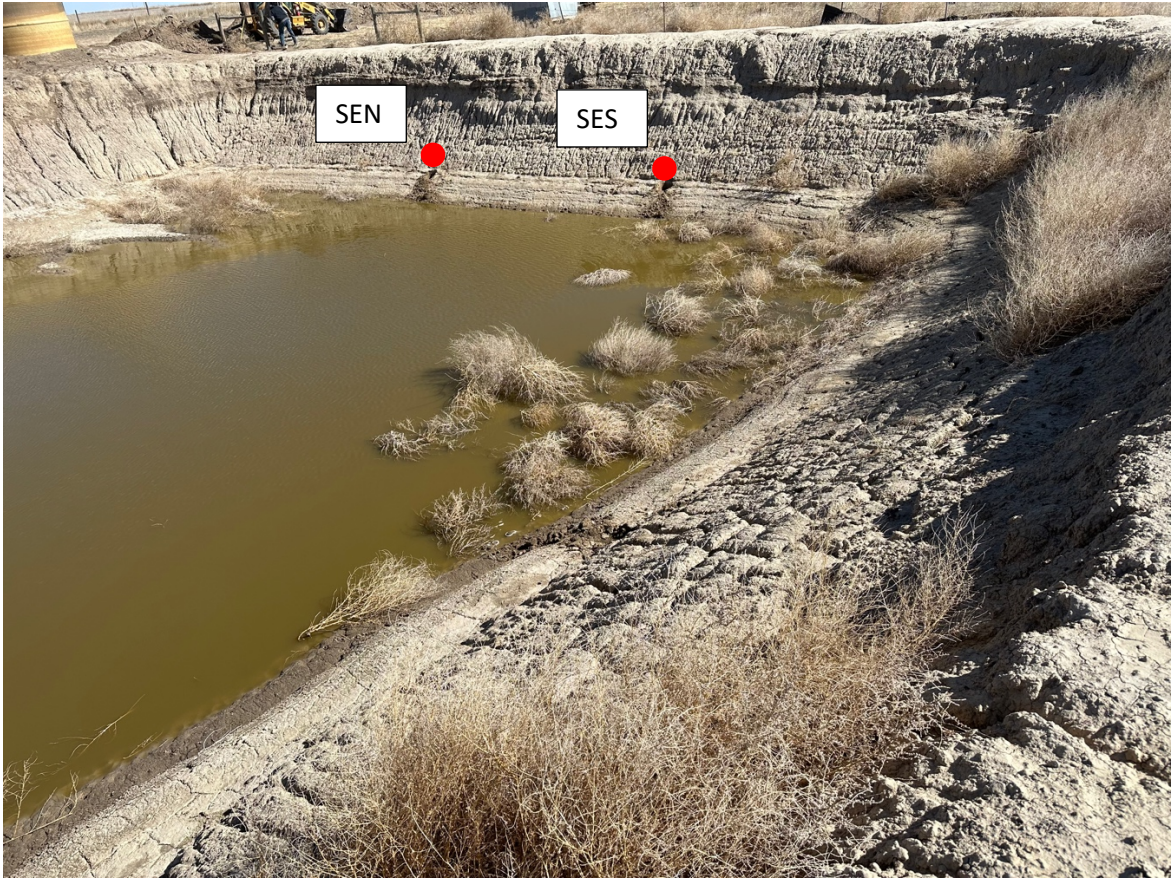
South Pit Facing Northwest



South Pit Facing Southwest



South Pit Facing East



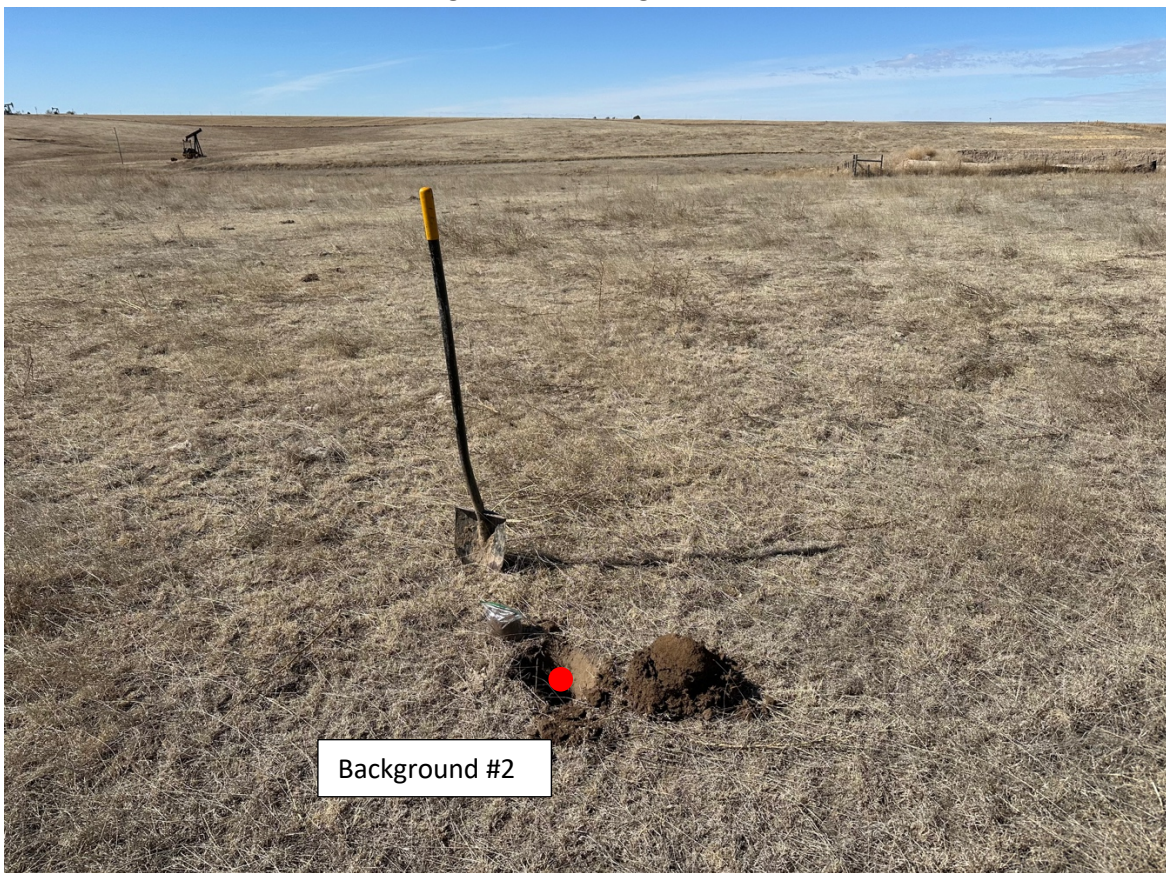
South Pit Facing South



Background Sample #1 Facing Southeast



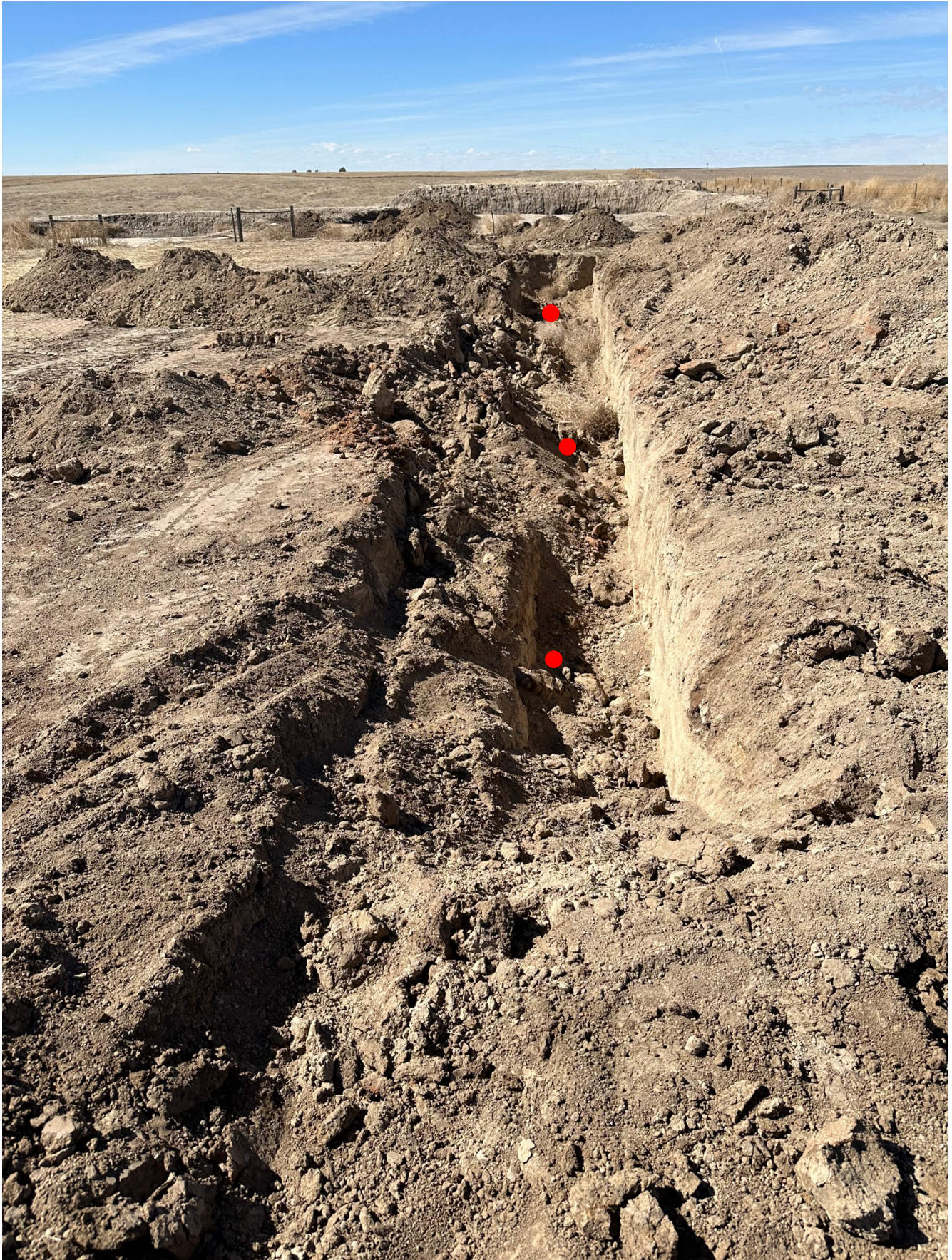
Background #2 Facing Southwest



Oil Dump Line trench Facing West, All PIDs 0.0 ppm



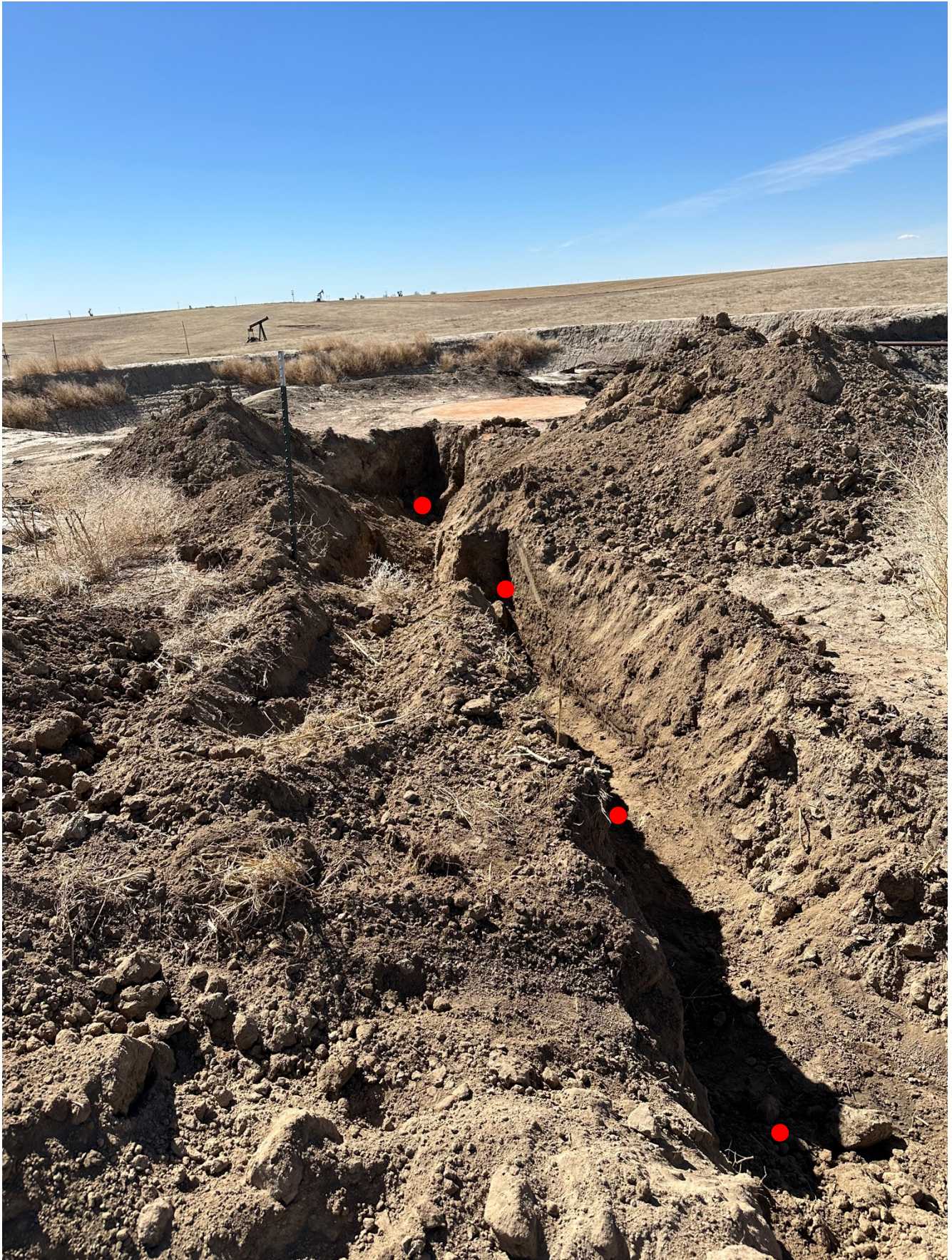
Oil Dump Line Trench Facing West, No PIDs above 0.0 ppm



Produced Water Dump Line Trench Facing West, No PIDs above 0.0 ppm



Produced Water Dump Line Trench Facing Southwest, No PIDs above 0.0 ppm



MARICK A-2 Photo Log

October 19, 2023

Title/Sample ID:

Background Sample 1



Title/Sample ID:

Background Sample 2



Title/Sample ID:

Cut-Cap Cement in Pipe



Title/Sample ID:

Cut-Cap Plate Welded On



Title/Sample ID:

Flowline Riser at Treater (Sample FL @ Riser 4')



Title/Sample ID:

Screening Point 1



Title/Sample ID:

Screening Point 2



Title/Sample ID:

Screening Point 3



Title/Sample ID:

Screening Point 4



Title/Sample ID:	Wellhead Sample (Sample WELL HEAD 4')
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