

TABLE 1
FORMER WERNING 3, 4-2 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
CONTAMINANTS OF CONCERN

Sample ID	Date Sampled	Depth	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Naphthalene (mg/kg)	TPH ⁽⁴⁾ (mg/kg)	Chrysene (mg/kg)	Fluorene (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Selenium (mg/kg)	pH (units)
Residential SSL ^(1,2)			1.2	490	5.8	58	30	27	2	500	110	240	180	18	24	0.68	15,000	390	
Protection of Groundwater SSL ^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	9	0.54	1.3	0.006	0.019	0.29	82	0.26	6-8.3
PWV01-B @ 5'	1/10/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	82.65	NA	NA	NA	NA	NA	NA	NA	NA	8.16
PWV01-N @ 4'	1/10/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	2.2	NA	NA	NA	NA	NA	NA	NA	NA	7.95
SEP01-FL @ 4'	1/10/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEP01-DL @ 4'	1/10/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA
AST01 @ 0-6"	1/10/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA
AST01-B @ 3'	2/16/2022	3 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.019	14	<0.00500	<0.00500	<0.00500	0.0217	0.0642	1.92	43.6	1.15	5.88
AST01-W @ 1.5'	2/16/2022	1.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.021	18	0.00777	<0.00500	<0.00500	<0.00500	0.0144	2.63	120	1.77	3.52
SS01 @ 6'	2/24/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	5.46	0.312	6.99
SS02 @ 6'	2/24/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.840	7.18	0.301	7.40
SS03 @ 2'	2/24/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	1.27	67.7	0.646	7.13
SS04 @ 4'	2/24/2022	4 ft. bgs	0.0036	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	0.00645	0.00722	3.71	73.0	0.785	7.74
SS05 @ 6'	2/25/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	60	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	8.39	<0.260	7.95
SS06 @ 5'	2/25/2022	5 ft. bgs	0.011	<0.0050	0.13	1.0	0.57	0.25	0.036	974	0.00777	0.0399	<0.00500	0.437	0.711	1.10	12.1	<0.582 ⁽⁴⁾	6.27
SS07 @ 8'	2/28/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	4.60	<0.260	7.72
SS08 @ 8'	2/28/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.795	7.67	0.297	7.69
SS09 @ 2'	3/1/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	1.35	17.6	0.274	7.40
SS10 @ 5'	3/1/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.608	41.6	0.468	7.84
SS11 @8'	3/1/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.453	35.3	0.737	6.25
SS12 @ 2'	3/1/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.689	10.2	<0.260	7.73
SS13 @ 5'	3/1/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.752	36.7	0.484	7.95
SS14 @ 2'	3/1/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.458	10.2	<0.260	7.92
SS15 @ 5'	3/1/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	6.94	0.689	3.81
SS16 @ 8'	3/1/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	4.00	0.290	7.22
SS17 @ 2'	3/2/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.692	8.00	<0.260	7.62
SS18 @ 5'	3/2/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	7.45	2.11	3.38
SS19 @ 2'	3/2/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	1.27	11.8	0.359	8.02
SS20 @ 5'	3/2/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.372	6.32	0.768	3.26
SS21 @ 8'	3/2/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	5.3	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.213	5.84	0.436	3.25
SS22 @ 8'	3/28/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	13.3	0.499	7.97
SS25 @ 2'	3/28/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	1.12	43.2	0.627	7.57
SS26 @ 5'	3/28/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	1.19	53.4	0.567	7.69
SS27 @ 8'	3/28/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.472	3.18	0.280	7.66
SS28 @ 2'	3/28/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.472	7.65	0.355	7.74
SS29 @ 5'	3/28/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	4.59	0.275	5.27
SS30 @ 2'	3/29/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.267	7.52	<0.260	7.36
SS31 @ 5'	3/29/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	3.32	<0.260	6.88
SS32 @ 2'	3/29/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.223	9.15	<0.260	5.91
SS33 @ 5'	3/29/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.531	5.44	0.490	3.07
SS34 @ 2'	3/29/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.211	5.55	0.283	7.60
SS35 @ 5'	3/29/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	187	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	6.22	0.475	3.16
SS36 @ 8'	3/31/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	12.5	0.291	8.18
SS37 @ 8'	3/31/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	21.1	0.287	8.21
SS38 @ 8'	3/31/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	6.62	<0.260	8.20
SS39 @ 2'	3/31/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.262	8.20	0.283	7.65
SS40 @ 5'	3/31/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.519	35.8	0.453	7.91
SS41 @ 2'	3/31/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	8.89	<0.260	7.36
SS42 @ 5'	3/31/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	0.472	63.6	0.895	7.32
SS43 @ 8'	4/1/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	11.9	<0.260	8.46
SS44 @ 8'	4/1/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500	<0.200	55.0	0.584	8.32
SS45 @ 8'	4/1/2022	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	NA	<0.00500	<0.00500</				

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Sample ID	Date Sampled	Depth	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Naphthalene (mg/kg)	TPH ⁽⁴⁾ (mg/kg)	Chrysene (mg/kg)	Fluorene (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Selenium (mg/kg)	pH (units)
Residential SSL ^(1,2)			1.2	490	5.8	58	30	27	2	500	110	240	180	18	24	0.68	15,000	390	
Protection of Groundwater SSL ^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	9	0.54	1.3	0.006	0.019	0.29	82	0.26	6-8.3
SS103 @ 12'	01/20/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	3.88	0.211	7.78
SS104 @ 12'	01/20/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	4.87	0.283	7.67
SS105 @ 12'	01/20/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.234	16.7	0.459	7.60
SS106 @ 12'	01/23/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	4.03	0.205	7.24
SS107 @ 10'	01/23/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.67	66.4	0.613	7.67
SS108 @ 12'	01/23/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	0.91	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	14.0	0.277	7.52
SS109 @ 12'	01/23/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	6.99	0.249	7.36
SS110 @ 12'	01/23/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	17.6	0.229	7.09
SS111 @ 12'	01/23/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	7.28	0.306	7.33
SS112 @ 12'	01/25/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	7.89	0.225	7.26
SS113 @ 10'	01/25/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.439	23.0	0.327	8.14
SS114 @ 12'	01/25/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.239	10.9	0.257	7.38
SS115 @ 12'	01/25/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	16.1	0.191	7.36
SS116 @ 12'	01/25/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	7.36	0.374	7.33
SS117 @ 12'	01/25/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.217	12.3	<0.175 ⁽⁶⁾	7.62
SS118 @ 12'	01/26/2023	12 ft. bgs	<0.0020	<0.0050	0.0091	0.071	0.082	0.062	0.0047	7.7	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	7.60	0.317	7.92
SS119 @ 12'	01/26/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	9.29	0.423	7.31
SS120 @ 12'	01/26/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	25.1	0.518	7.40
SS121 @ 12'	01/26/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	0.020	0.013	0.012	<0.0038	0.88	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.200	11.1	0.399	7.63
SS122 @ 12'	01/26/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	5.64	0.210	7.36
SS123 @ 12'	01/26/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	13.3	0.412	7.55
SS124 @ 12'	01/26/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	6.17	0.250	7.47
SS125 @ 10'	01/26/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.663	45.8	0.533	7.89
SS126 @ 12'	01/26/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.26	10.7	0.437	7.51
SS127 @ 12'	01/27/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.363	4.71	<0.175 ⁽⁶⁾	7.50
SS128 @ 12'	01/27/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.265	9.54	<0.175 ⁽⁶⁾	7.28
SS129 @ 12'	01/27/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.337	10.3	<0.175 ⁽⁶⁾	7.24
SS130 @ 12.5'	01/27/2023	12.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.211	4.40	<0.175 ⁽⁶⁾	7.32
SS131 @ 8'	01/27/2023	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.24	110	2.04	6.88
SS132 @ 10'	01/27/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.59	10.5	0.651	7.84
SS133 @ 12'	01/27/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	2.56	<0.175 ⁽⁶⁾	7.33
SS134 @ 12'	01/27/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.333	5.55	<0.175 ⁽⁶⁾	7.40
SS135 @ 12'	01/27/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.312	7.91	<0.175 ⁽⁶⁾	7.94
SS136 @ 12'	01/31/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	3.62	<0.175 ⁽⁶⁾	7.33
SS137 @ 8'	02/01/2023	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.399	67.4	0.247	7.31
SS138 @ 10'	02/01/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	2.82	22.7	1.01	7.91
SS139 @ 12'	02/01/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	4.25	<0.175 ⁽⁶⁾	8.53
SS140 @ 12'	02/01/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	7.73	<0.175 ⁽⁶⁾	8.28
SS141 @ 12.5'	02/02/2023	12.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.269	4.42	0.197	7.75
SS142 @ 12'	02/02/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	5.56	0.253	7.75
SS143 @ 12'	02/02/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	5.55	<0.175 ⁽⁶⁾	7.84
SS144 @ 12'	02/02/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	15.0	0.188	7.74
SS145 @ 8'	02/03/2023	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.511	50.8	0.956	7.99
SS146 @ 10'	02/03/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	0.058	0.021	0.014	<0.0038	0.81	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.01	75.5	0.767	8.16
SS147 @ 12'	02/03/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	0.019	0.0080	0.0070	<0.0038	0.72	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	8.23	0.376	8.49
SS148 @ 8'	02/03/2023	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	54.0	0.922	8.41
SS149 @ 10'	02/03/2023	10 ft. bgs	<0.																

TABLE 1
FORMER WERNING 3, 4-2 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
CONTAMINANTS OF CONCERN

Sample ID	Date Sampled	Depth	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Naphthalene (mg/kg)	TPH ⁽⁴⁾ (mg/kg)	Chrysene (mg/kg)	Fluorene (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Selenium (mg/kg)	pH (units)
Residential SSL ^(1,2)			1.2	490	5.8	58	30	27	2	500	110	240	180	18	24	0.68	15,000	390	6-8.3
Protection of Groundwater SSL ^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	9	0.54	1.3	0.006	0.019	0.29	82	0.26	
SS207 @ 8'	3/15/2023	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.628	8.76	<0.175 ⁽⁶⁾	8.20
SS208 @ 10'	3/15/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.249	9.15	<0.175 ⁽⁶⁾	7.47
SS209 @ 12'	3/15/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.46	72.3	0.472	7.40
SS210 @ 12'	3/15/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.518	4.82	<0.175 ⁽⁶⁾	7.47
SS211 @ 10'	3/16/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.49	71.4	0.665	7.89
SS212 @ 12'	3/16/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.217	70.1	0.999	7.60
SS213 @ 8'	3/16/2023	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.638	48.0	0.558	7.60
SS214 @ 10'	3/16/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	0.037	0.023	0.0053	1.3	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.510	29.9	0.520	8.49
SS215 @ 12'	3/16/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	8.31	0.294	7.90
SS216 @ 10'	3/16/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.47	52.1	0.554	8.30
SS217 @ 12'	3/17/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.523	17.7	<0.175 ⁽⁶⁾	7.42
SS218 @ 8'	3/17/2023	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.39	87.4	0.347	6.91
SS219 @ 10'	3/17/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.329	29.9	<0.175 ⁽⁶⁾	6.09
SS220 @ 10'	3/17/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	3.15	<0.175 ⁽⁶⁾	7.50
SS221 @ 8'	3/17/2023	8 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	0.00861	<0.00500	0.0158	<0.00500	<0.00500	4.18	75.2	<0.175 ⁽⁶⁾	7.83
SS222 @ 10'	3/17/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.253	9.97	<0.175 ⁽⁶⁾	7.74
SS223 @ 12'	3/17/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.200	5.48	<0.175 ⁽⁶⁾	7.74
SS224 @ 10'	3/17/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.440	7.80	<0.175 ⁽⁶⁾	7.83
SS225 @ 12'	3/17/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	0.00755	<0.00500	<0.00500	0.575	6.99	<0.175 ⁽⁶⁾	7.63
SS226 @ 10'	3/17/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	0.00631	<0.00500	<0.00500	0.294	4.80	<0.175 ⁽⁶⁾	7.74
SS227 @ 12'	3/17/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	0.00601	<0.00500	<0.00500	0.490	4.34	<0.175 ⁽⁶⁾	8.06
SS229 @ 10'	03/30/2023	10 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	0.00601	<0.00500	<0.00500	<0.200	7.00	0.328	7.32
SS230 @ 12'	03/30/2023	12 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	0.00601	<0.00500	<0.00500	<0.200	7.61	0.314	7.46
Background Evaluation Concentration ⁽⁵⁾																1.43	82	0.821	8.50

Notes:
1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
3. SSLs are applicable if a pathway for communication with groundwater is present.
4. Value calculated by adding TVPH-GRO, TEPH-DRO, and TEPH-ORO concentrations.
5. Concentration used to evaluate contaminant of concern metals is detailed in the table above. The method for determining the concentration (if it differentiates from the SSL) is further detailed on Table 2 & Table 4.
6. Non-detect value reflects the method detection limit (MDL) provided in the laboratory report.
COGCC = Colorado Oil and Gas Conservation Commission
(<) = Analytical result is less than the indicated laboratory reporting limit.
TVPH-GRO = Total volatile petroleum hydrocarbons - gasoline range organics
TEPH-DRO = Total extractable petroleum hydrocarbons - diesel range organics
TEPH-ORO = Total extractable petroleum hydrocarbons - oil range organics
mg/kg = Milligrams per kilogram
TMB = Trimethylbenzene
M = Methylnaphthalene
= Source material characterization sample, excavated and transported off-site for disposal.
= Sample material excavated and transported off-site for disposal.
ft. = Feet
in. = Inches
bgs = Below ground surface
BOLD = Analytical result is in exceedance of applicable standard.
BOLD = Analytical result is in exceedance of applicable standard, but below 1.25x background concentration.
NA = Constituent not analyzed

TABLE 2
FORMER WERNING 3-2 & 4-2 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitability for Reclamation Standard ⁽¹⁾			6-8.3	<4	<6	2
PWV01-B @ 5'	1/10/2022	5 ft. bgs	8.16	0.369	0.362	0.0407
PWV01-N @ 4'	1/10/2022	4 ft. bgs	7.95	0.382	0.192	0.0720
AST01-B @ 3'	2/16/2022	3 ft. bgs	5.88	1.21	0.183	0.197
AST01-W @ 1.5'	2/16/2022	1.5 ft. bgs	3.52	2.25	0.0687	0.0296
SS06 @ 5'	2/25/2022	5 ft. bgs	6.27	1.74	0.0235	0.123
SS23 @ 2.5'	3/28/2022	2.5 ft. bgs	6.81	0.0633	0.467	0.0371
SS24 @ 2.5'	3/28/2022	2.5 ft. bgs	6.48	0.0664	0.333	0.0230
SS49 @ 2.5'	4/4/2022	2.5 ft. bgs	7.81	0.302	0.627	0.0208
WC01 @ 10'	01/12/2023	10 ft. bgs	8.05	0.635	2.16	0.0395
SS100 @ 2.5'	01/20/2023	2.5 ft. bgs	7.65	3.74	3.25	0.702
SS101 @ 2.5'	01/20/2023	2.5 ft. bgs	7.95	0.662	1.31	0.0402
SS182 @ 2.5'	2/21/2022	2.5 ft. bgs	7.22	0.112	0.233	0.0834
SS228 @ 2.5'	3/17/2022	2.5 ft. bgs	7.19	0.238	0.570	0.0397
BKG02 @ 2'	3/1/2022	2 ft. bgs	8.50	NA	NA	NA
BKG02 @ 5'	3/1/2022	5 ft. bgs	8.04	NA	NA	NA
BKG02 @ 8'	3/1/2022	8 ft. bgs	8.01	NA	NA	NA
BKG03 @ 2'	3/1/2022	2 ft. bgs	7.36	NA	NA	NA
BKG03 @ 5'	3/1/2022	5 ft. bgs	7.84	NA	NA	NA
BKG03 @ 8'	3/1/2022	8 ft. bgs	8.04	NA	NA	NA
BKG04 @ 2'	4/6/2022	2 ft. bgs	8.36	NA	NA	NA
BKG04 @ 2.5'	4/6/2022	2.5 ft. bgs	8.03	NA	NA	NA
BKG04 @ 5'	4/6/2022	5 ft. bgs	8.33	NA	NA	NA
BKG04 @ 8'	4/6/2022	8 ft. bgs	6.84	NA	NA	NA
BKG05 @ 8'	02/08/2023	8 ft. bgs	7.47	NA	NA	NA
BKG05 @ 10'	02/08/2023	10 ft. bgs	8.15	NA	NA	NA
BKG06 @ 2'	02/08/2023	2 ft. bgs	7.95	NA	NA	NA

TABLE 2
FORMER WERNING 3-2 & 4-2 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitability for Reclamation Standard ⁽¹⁾			6-8.3	<4	<6	2
BKG06 @ 5'	02/08/2023	5 ft. bgs	7.49	NA	NA	NA
BKG06 @ 8'	02/08/2023	8 ft. bgs	7.65	NA	NA	NA
BKG06 @ 10'	02/08/2023	10 ft. bgs	7.54	NA	NA	NA
BKG07 @ 2'	02/10/2023	2 ft. bgs	7.25	NA	NA	NA
BKG07 @ 5'	02/10/2023	5 ft. bgs	7.32	NA	NA	NA
BKG07@8'	02/10/2023	8 ft. bgs	7.16	NA	NA	NA
BKG07 @ 10'	02/10/2023	10 ft. bgs	7.41	NA	NA	NA
BKG08@2'	02/10/2023	2 ft. bgs	7.82	NA	NA	NA
BKG08@5'	02/10/2023	5 ft. bgs	7.14	NA	NA	NA
BKG08@8'	02/10/2023	8 ft. bgs	7.74	NA	NA	NA
BKG08@10'	02/10/2023	10 ft. bgs	7.51	NA	NA	NA

Notes:

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = Millimhos per centimeter

mg/L = Milligrams per liter

ft. = Feet

bgs = Below ground surface

 = Source material characterization sample, excavated and transported off-site for disposal.

 = Sample material excavated and transported off-site for disposal.

NA = Constituent not analyzed

BOLD = Analytical result is in exceedance of applicable standard.

TABLE 3
FORMER WERNING 3, 4-2 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS - PAHs

Sample ID	Date Sampled	Depth	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ^(1,2)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^(1,2,3)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
AST01-B @ 3'	2/25/2022	3 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0217	0.0642
AST01-W @ 1.5'	2/25/2022	1.5 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0144
SS05 @ 6'	2/25/2022	6 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS06 @ 5'	2/25/2022	5 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00777	<0.00500	<0.00500	0.0399	<0.00500	<0.00500	0.437	0.711
WC01 @ 10'	01/12/2023	10 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0107	<0.00500	<0.00500	0.0497	<0.00500	0.00860	2.05	4.81

Notes:
1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
3. SSLs are applicable if a pathway for communication with groundwater is present.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

PAHs = Polycyclic aromatic hydrocarbons

Benzo(a) = Benzanthracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

M = Methylnaphthalene

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

= Source material characterization sample, excavated and transported off-site for disposal.

= Sample material excavated and transported off-site for disposal.

BOLD = Analytical result is in exceedance of applicable standard.

TABLE 4
FORMER WERNING 3, 4-2 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
METALS

Sample ID	Date Sampled	Depth	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ^(1,2)			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^(1,2,3)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
AST01-B @ 3'	2/16/2022	3 ft. bgs	1.92	43.6	<0.329	<0.30 ⁽⁴⁾	4.55	3.50	4.82	1.15	<0.247	17.3
AST01-W @ 1.5'	2/16/2022	1.5 ft. bgs	2.63	120	<0.374	<0.30 ⁽⁴⁾	9.79	8.44	8.82	1.77	<0.281	44.4
SS06 @ 5'	2/25/2022	5 ft. bgs	1.10	12.1	<0.582 ⁽⁴⁾	<0.30 ⁽⁴⁾	<2.91	1.69	<1.45	<0.582 ⁽⁴⁾	<0.436	8.04
WC01 @ 10'	01/12/2023	10 ft. bgs	0.370	10.5	<0.215	<0.30 ⁽⁴⁾	0.922	1.33	0.883	<0.280 ⁽⁴⁾	<0.0215	4.83
BKG02 @ 2'	3/1/2022	2 ft. bgs	1.44	7.52	<0.204	<0.30 ⁽⁴⁾	4.33	3.65	1.09	0.757	0.0616	13.1
BKG02 @ 5'	3/1/2022	5 ft. bgs	0.708	25.0	<0.213	<0.30 ⁽⁴⁾	2.75	2.86	3.04	0.859	0.0298	15.0
BKG02 @ 8'	3/1/2022	8 ft. bgs	<0.209	4.23	<0.209	<0.30 ⁽⁴⁾	0.891	1.14	1.06	0.750	<0.0209	6.22
BKG03 @ 2'	3/1/2022	2 ft. bgs	1.73	11.2	<0.205	<0.30 ⁽⁴⁾	9.76	12.5	1.30	0.512	0.147	28.8
BKG03 @ 5'	3/1/2022	5 ft. bgs	1.96	32.4	<0.224	<0.30 ⁽⁴⁾	2.98	2.92	2.78	0.753	0.0249	14.3
BKG03 @ 8'	3/1/2022	8 ft. bgs	1.45	28.7	<0.210	<0.30 ⁽⁴⁾	5.46	5.80	2.40	0.753	0.0682	18.7
BKG04 @ 2'	4/6/2022	2 ft. bgs	0.523	85.1	<0.238	<0.30 ⁽⁴⁾	6.94	6.18	5.38	0.832	0.0331	29.6
BKG04 @ 2.5'	4/6/2022	2.5 ft. bgs	0.397	8.53	<0.203	<0.30 ⁽⁴⁾	1.24	1.30	0.814	<0.263 ⁽⁴⁾	<0.0203	5.71
BKG04 @ 5'	4/6/2022	5 ft. bgs	<0.265	92.2	<0.265	<0.30 ⁽⁴⁾	10.0	7.67	12.2	1.26	0.0543	46.5
BKG04 @ 8'	4/6/2022	8 ft. bgs	<0.222	7.02	<0.222	<0.30 ⁽⁴⁾	1.09	1.55	1.25	0.338	<0.0222	6.16
BKG05@8'	02/08/2023	8 ft. bgs	5.02	242	NA	NA	NA	NA	NA	1.23	NA	NA
BKG05@10'	02/08/2023	10 ft. bgs	0.882	27.1	NA	NA	NA	NA	NA	0.354	NA	NA
BKG06@2'	02/08/2023	2 ft. bgs	0.610	12.5	NA	NA	NA	NA	NA	<0.175 ⁽⁷⁾	NA	NA
BKG06@5'	02/08/2023	5 ft. bgs	0.452	16.1	NA	NA	NA	NA	NA	<0.175 ⁽⁷⁾	NA	NA
BKG06@8'	02/08/2023	8 ft. bgs	0.686	30.4	NA	NA	NA	NA	NA	<0.175 ⁽⁷⁾	NA	NA
BKG06@10'	02/08/2023	10 ft. bgs	2.35	35.1	NA	NA	NA	NA	NA	0.654	NA	NA
BKG07@2'	02/10/2023	2 ft. bgs	0.426	15.2	NA	NA	NA	NA	NA	0.389	NA	NA
BKG07@5'	02/10/2023	5 ft. bgs	1.59	128	NA	NA	NA	NA	NA	1.01	NA	NA
BKG07@8'	02/10/2023	8 ft. bgs	0.249	41.9	NA	NA	NA	NA	NA	1.12	NA	NA
BKG07@10'	02/10/2023	10 ft. bgs	0.250	10.0	NA	NA	NA	NA	NA	0.368	NA	NA
BKG08@2'	02/10/2023	2 ft. bgs	0.822	16.4	NA	NA	NA	NA	NA	0.339	NA	NA
BKG08@5'	02/10/2023	5 ft. bgs	0.797	63.6	NA	NA	NA	NA	NA	0.634	NA	NA
BKG08@8'	02/10/2023	8 ft. bgs	0.771	27.9	NA	NA	NA	NA	NA	0.469	NA	NA
BKG08@10'	02/10/2023	10 ft. bgs	0.415	9.03	NA	NA	NA	NA	NA	0.212	NA	NA
Mean Background Concentration ⁽⁵⁾⁽⁶⁾			1.14	39.2	0.211	0.30	4.36	4.81	1.95	0.657	0.0587	16.0
1.25x Mean Background Concentration			1.43	49.0	0.264	0.38	5.45	6.01	2.43	0.821	0.0734	20.0

Notes:

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
3. SSLs are applicable if a pathway for communication with groundwater is present.
4. Compound falls within COGCC Table 915-1 Footnote 9.
5. Non-detect background results accounted for in the mean background concentration by using the reporting limit, or method detection limit (MDL), if provided (selenium).
6. Due to the proximity of soil sample BKG04 to the final excavation extent, BKG04 concentrations were not included in mean background concentration calculations.
7. Non-detect value reflects the method detection limit (MDL) provided in the laboratory report.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

mg/kg = Milligrams per kilogram

= Source material characterization sample, excavated and transported off-site for disposal.

ft. = Feet

bgs = Below ground surface

NA = Constituent not analyzed

BOLD = Analytical result is in exceedance of applicable standard, and above 1.25x background concentration.

BOLD = Analytical result is in exceedance of applicable standard, but within 1.25x background concentration.

Metals evaluation:

Arsenic:

Concentration used to evaluate arsenic Protection of Groundwater SSL exceedances is 1.25 times the average arsenic background concentration (1.14 mg/kg x 1.25 = 1.43 mg/kg).

Selenium:

Concentration used to evaluate selenium Protection of Groundwater SSL exceedances is 1.25 times the average selenium background concentration including the reporting limit for non-detect values (0.657 mg/kg x 1.25 = 0.821 mg/kg).

TABLE 5
FORMER WERNING 3, 4-2 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
GW01	2/24/2022	1.1	<1.0	5.0	<1.0	8.2	<1.0	<1.0	5	NA

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.

2. Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

TMB = Trimethylbenzene

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

(<) = Analytical result is less than the indicated laboratory reporting limit.

ft. = Feet

AMSL = Above Mean Sea Level

NA = Not applicable

TABLE 6
FORMER WERNING 3, 4-2 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
AST01 @ 0-6"	1/10/2022	0-6 in. bgs	40.346652	-104.745286	1.5	0.0
WDL01 @ 4'	1/10/2022	4 ft. bgs	40.346651	-104.745384	1.4	4.0
MH01 @ 0-6"	1/10/2022	0-6 in. bgs	40.346677	-104.745700	1.4	0.0
SEP01-FL @ 4'	1/10/2022	4 ft. bgs	40.346632	-104.745689	1.3	0.0
SEP01-DL @ 4'	1/10/2022	4 ft. bgs	40.346633	-104.745661	1.4	0.0
PWV01-B @ 5'	1/10/2022	5 ft. bgs	40.346651	-104.745356	1.4	24.4
PWV01-N @ 4'	1/10/2022	4 ft. bgs	40.346663	-104.745358	1.4	43.5
PWV01-W @ 4'	1/10/2022	4 ft. bgs	40.346641	-104.745380	1.3	3.7
PWV01-S @ 4'	1/10/2022	4 ft. bgs	40.346636	-104.745354	1.2	2.4
PWV01-E @ 4'	1/10/2022	4 ft. bgs	40.346649	-104.745333	1.5	3.3
BKG01 @ 0-6"	1/10/2022	0-6 in. bgs	40.346499	-104.745640	1.2	0.0
BKG01 @ 4'	1/10/2022	4 ft. bgs	40.346499	-104.745640	1.2	0.0
BKG01 @ 5'	1/10/2022	5 ft. bgs	40.346499	-104.745640	1.2	0.0
AST01-B @ 3'	2/16/2022	3 ft. bgs	40.346647	-104.745175	0.9	491.0
AST01-N @ 1.5'	2/16/2022	1.5 ft. bgs	40.346657	-104.745190	0.9	22.3
AST01-W @ 1.5'	2/16/2022	1.5 ft. bgs	40.346636	-104.745192	0.9	1,624
AST01-S @ 1.5'	2/16/2022	1.5 ft. bgs	40.346634	-104.745166	0.9	177.0
AST01-E @ 1.5'	2/16/2022	1.5 ft. bgs	40.346653	-104.745163	0.9	1,453
GW01	2/24/2022	5 ft. bgs	NC	NC	NA	NA
SS01 @ 6'	2/24/2022	6 ft. bgs	40.346653	-104.745163	0.9	2.2
SS02 @ 6'	2/24/2022	6 ft. bgs	NC	NC	NA	0.0
SS03 @ 2'	2/24/2022	2 ft. bgs	40.346683	-104.745167	1.0	13.2
SS04 @ 4'	2/24/2022	4 ft. bgs	40.346683	-104.745167	1.0	11.3
SS05 @ 6'	2/25/2022	6 ft. bgs	NC	NC	NA	3.1
SS06 @ 5'	2/25/2022	5 ft. bgs	40.346633	-104.745043	1.1	2,850
SS07 @ 8'	2/28/2022	8 ft. bgs	NC	NC	NA	1.7
SS08 @ 8'	2/28/2022	8 ft. bgs	NC	NC	NA	0.3
BKG02 @ 2'	3/1/2022	2 ft. bgs	40.346400	-104.745186	1.1	0.0
BKG02 @ 5'	3/1/2022	5 ft. bgs	40.346400	-104.745186	1.1	0.0
BKG02 @ 8'	3/1/2022	8 ft. bgs	40.346400	-104.745186	1.1	0.0
SS09 @ 2'	3/1/2022	2 ft. bgs	40.346576	-104.744890	1	0.1
SS10 @ 5'	3/1/2022	5 ft. bgs	40.346576	-104.744890	1	0.1
SS11 @ 8'	3/1/2022	8 ft. bgs	NC	NC	NA	0.2
SS12 @ 2'	3/1/2022	2 ft. bgs	40.346629	-104.744845	0.9	0.5
SS13 @ 5'	3/1/2022	5 ft. bgs	40.346629	-104.744845	0.9	0.7
BKG03 @ 2'	3/1/2022	2 ft. bgs	40.346468	-104.744970	0.9	0.2
BKG03 @ 5'	3/1/2022	5 ft. bgs	40.346468	-104.744970	0.9	0.3
BKG03 @ 8'	3/1/2022	8 ft. bgs	40.346468	-104.744970	0.9	0.2
SS14 @ 2'	3/1/2022	2 ft. bgs	40.346679	-104.744813	1	0.2
SS15 @ 5'	3/1/2022	5 ft. bgs	40.346679	-104.744813	1	0.5
SS16 @ 8'	3/1/2022	8 ft. bgs	NC	NC	NA	0.7
SS17 @ 2'	3/2/2022	2 ft. bgs	NC	NC	NA	0.4
SS18 @ 5'	3/2/2022	5 ft. bgs	NC	NC	NA	0.0
SS19 @ 2'	3/2/2022	2 ft. bgs	40.346524	-104.744975	0.9	0.3
SS20 @ 5'	3/2/2022	5 ft. bgs	40.346524	-104.744975	0.9	1.1

TABLE 6
FORMER WERNING 3, 4-2 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS21 @ 8'	3/2/2022	8 ft. bgs	NC	NC	NA	14.2
SS22 @ 8'	3/28/2022	8 ft. bgs	NC	NC	NA	3.2
SS23 @ 2.5'	3/28/2022	2.5 ft. bgs	40.346632	-104.744812	1.1	0.2
SS24 @ 2.5'	3/28/2022	2.5 ft. bgs	40.346517	-104.744933	1	0.4
SS25 @ 2'	3/28/2022	2 ft. bgs	40.346481	-104.745104	1	0.7
SS26 @ 5'	3/28/2022	5 ft. bgs	40.346481	-104.745104	1	4.2
SS27 @ 8'	3/28/2022	8 ft. bgs	NC	NC	NA	0.3
SS28 @ 2'	3/28/2022	2 ft. bgs	40.346472	-104.745207	1	0.6
SS29 @ 5'	3/28/2022	5 ft. bgs	40.346472	-104.745207	1	0.3
SS30 @ 2'	3/29/2022	2 ft. bgs	40.346446	-104.745243	0.9	0.0
SS31 @ 5'	3/29/2022	5 ft. bgs	40.346446	-104.745243	0.9	0.9
SS32 @ 2'	3/29/2022	2 ft. bgs	40.346451	-104.745306	0.9	0.7
SS33 @ 5'	3/29/2022	5 ft. bgs	40.346451	-104.745306	0.9	5.1
SS34 @ 2'	3/29/2022	2 ft. bgs	40.346487	-104.745370	0.9	0.4
SS35 @ 5'	3/29/2022	5 ft. bgs	40.346487	-104.745370	0.9	19.8
SS36 @ 8'	3/31/2022	8 ft. bgs	NC	NC	NA	0.7
SS37 @ 8'	3/31/2022	8 ft. bgs	NC	NC	NA	0.0
SS38 @ 8'	3/31/2022	8 ft. bgs	NC	NC	NA	0.6
SS39 @ 2'	3/31/2022	2 ft. bgs	40.346525	-104.745400	0.8	0.3
SS40 @ 5'	3/31/2022	5 ft. bgs	40.346525	-104.745400	0.8	0.6
SS41 @ 2'	3/31/2022	2 ft. bgs	40.346576	-104.745441	1.2	0.0
SS42 @ 5'	3/31/2022	5 ft. bgs	40.346576	-104.745441	1.2	0.5
SS43 @ 8'	4/1/2022	8 ft. bgs	NC	NC	NA	1.8
SS44 @ 8'	4/1/2022	8 ft. bgs	NC	NC	NA	0.7
SS45 @ 8'	4/1/2022	8 ft. bgs	NC	NC	NA	0.2
SS46 @ 8'	4/4/2022	8 ft. bgs	NC	NC	NA	5.9
SS47 @ 2'	4/4/2022	2 ft. bgs	40.346620	-104.745490	0.9	0.3
SS48 @ 5'	4/4/2022	5 ft. bgs	40.346620	-104.745490	0.9	1.0
SS49 @ 2.5'	4/4/2022	2.5 ft. bgs	40.346582	-104.745451	0.9	0.5
SS50 @ 8'	4/4/2022	8 ft. bgs	NC	NC	NA	2.5
SS51 @ 2'	4/6/2022	2 ft. bgs	40.346738	-104.744850	1.2	0.3
SS52 @ 5'	4/6/2022	5 ft. bgs	40.346738	-104.744850	1.2	105.8
SS53 @ 8'	4/6/2022	8 ft. bgs	NC	NC	NA	0.6
BKG04 @ 2'	4/6/2022	2 ft. bgs	40.346695	-104.744738	1	0.1
BKG04 @ 2.5'	4/6/2022	2.5 ft. bgs	40.346695	-104.744738	1	0.3
BKG04 @ 5'	4/6/2022	5 ft. bgs	40.346695	-104.744738	1	0.6
BKG04 @ 8'	4/6/2022	8 ft. bgs	40.346695	-104.744738	1	0.7
SS54 @ 8'	4/6/2022	8 ft. bgs	40.346730	-104.744924	0.9	3.1
SS55 @ 8'	4/6/2022	8 ft. bgs	40.346729	-104.745008	0.9	4.9
SS56 @ 8'	4/6/2022	8 ft. bgs	40.346725	-104.745070	0.8	0.6
SS57 @ 8'	4/6/2022	8 ft. bgs	40.346713	-104.745146	0.9	2.4
SS59 @ 8'	4/6/2022	8 ft. bgs	40.346728	-104.744962	0.9	0.6
SS60 @ 8'	4/7/2022	8 ft. bgs	40.346707	-104.745295	0.9	3.2
SS61 @ 8'	4/7/2022	8 ft. bgs	40.346701	-104.745372	0.9	0.3
SS62 @ 8'	4/7/2022	8 ft. bgs	NC	NC	NA	0.9

TABLE 6
FORMER WERNING 3, 4-2 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS63 @ 8'	4/7/2022	8 ft. bgs	40.346703	-104.745429	0.8	0.1
SS64 @ 2'	4/7/2022	2 ft. bgs	40.346693	-104.745515	0.8	0.1
SS65 @ 5'	4/7/2022	5 ft. bgs	40.346693	-104.745515	0.8	0.4
SS66 @ 8'	4/7/2022	8 ft. bgs	NC	NC	NA	0.2
SS67 @ 12'	1/10/2023	12 ft. bgs	NC	NC	NA	21.7
SS68 @ 14'	1/10/2023	14 ft. bgs	NC	NC	NA	3.4
SS69 @ 8'	1/10/2023	8 ft. bgs	40.346882	-104.744595	0.8	0.4
SS70 @ 10'	1/10/2023	10 ft. bgs	40.346882	-104.744595	0.8	1.3
SS71 @ 12'	1/11/2023	12 ft. bgs	NC	NC	NA	0.8
SS72 @ 8'	1/11/2023	8 ft. bgs	40.346913	-104.744653	1.6	0.5
SS73 @ 10'	1/11/2023	10 ft. bgs	40.346913	-104.744653	1.6	3.1
SS74 @ 8'	1/11/2023	8 ft. bgs	40.346922	-104.744712	1.1	0.2
SS75 @ 10'	1/11/2023	10 ft. bgs	40.346922	-104.744712	1.1	0.1
WC01 @ 10'	01/12/2023	10 ft. bgs	40.346945	-104.744885	0.8	2,920
SS76 @ 12'	01/12/2023	12 ft. bgs	NC	NC	NA	0.3
SS77 @ 8'	01/12/2023	8 ft. bgs	40.346960	-104.744766	0.8	0.3
SS78 @ 10'	01/12/2023	10 ft. bgs	40.346960	-104.744766	0.8	1.4
SS79 @ 12'	01/12/2023	12 ft. bgs	NC	NC	NA	13.2
SS80 @ 8'	01/12/2023	8 ft. bgs	40.346966	-104.744831	0.8	0.2
SS81 @ 10'	01/12/2023	10 ft. bgs	40.346966	-104.744831	0.8	2.5
SS82 @ 8'	01/12/2023	8 ft. bgs	40.346841	-104.744619	0.8	0.4
SS83 @ 10'	01/12/2023	10 ft. bgs	40.346841	-104.744619	0.8	0.2
SS84 @ 8'	01/12/2023	8 ft. bgs	40.346808	-104.744676	0.8	0.9
SS85 @ 10'	01/12/2023	10 ft. bgs	40.346808	-104.744676	0.8	4.7
SS86 @ 12'	01/13/2023	12 ft. bgs	NC	NC	NA	17.8
SS87 @ 12'	01/13/2023	12 ft. bgs	NC	NC	NA	4.9
SS88 @ 8'	01/13/2023	8 ft. bgs	40.346769	-104.744730	0.8	0.9
SS89 @ 10'	01/13/2023	10 ft. bgs	40.346769	-104.744730	0.8	43.5
SS90 @ 12'	01/13/2023	12 ft. bgs	NC	NC	NA	1.7
SS91 @ 8'	01/13/2023	8 ft. bgs	40.346713	-104.744756	0.8	0.2
SS92 @ 10'	01/13/2023	10 ft. bgs	40.346713	-104.744756	0.8	0.7
SS93 @ 12'	01/13/2023	12 ft. bgs	NC	NC	NA	0.0
SS94 @ 8'	01/13/2023	8 ft. bgs	40.346668	-104.744787	0.8	0.0
SS95 @ 10'	01/13/2023	10 ft. bgs	40.346668	-104.744787	0.8	0.0
SS96 @ 10'	01/16/2023	10 ft. bgs	40.346671	-104.744855	1.2	0.0
SS97 @ 12'	01/16/2023	12 ft. bgs	NC	NC	NA	10.9
SS98 @ 10'	01/16/2023	10 ft. bgs	40.346700	-104.744909	1.1	0.8
SS99 @ 12'	01/20/2023	12 ft. bgs	NC	NC	NA	0.2
SS100 @ 2.5'	01/20/2023	2.5 ft. bgs	40.346807	-104.744674	1.0	0.0
SS101 @ 2.5'	01/20/2023	2.5 ft. bgs	40.346931	-104.744720	0.9	0.0
SS102 @ 12'	01/20/2023	12 ft. bgs	NC	NC	NA	1.9
SS103 @ 12'	01/20/2023	12 ft. bgs	NC	NC	NA	0.8
SS104 @ 12'	01/20/2023	12 ft. bgs	NC	NC	NA	4.8
SS105 @ 12'	01/20/2023	12 ft. bgs	NC	NC	NA	0.9
SS106 @ 12'	01/23/2023	12 ft. bgs	NC	NC	NA	0.4

TABLE 6
FORMER WERNING 3, 4-2 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS107 @ 10'	01/23/2023	10 ft. bgs	40.346692	-104.744978	0.8	0.2
SS108 @ 12'	01/23/2023	12 ft. bgs	NC	NC	NA	0.9
SS109 @ 12'	01/23/2023	12 ft. bgs	NC	NC	NA	0.5
SS110 @ 12'	01/23/2023	12 ft. bgs	NC	NC	NA	0.0
SS111 @ 12'	01/23/2023	12 ft. bgs	NC	NC	NA	1.1
SS112 @ 12'	01/25/2023	12 ft. bgs	NC	NC	NA	0.0
SS113 @ 10'	01/25/2023	10 ft. bgs	40.346669	-104.745048	0.8	7.1
SS114 @ 12'	01/25/2023	12 ft. bgs	NC	NC	NA	0.4
SS115 @ 12'	01/25/2023	12 ft. bgs	NC	NC	NA	0.3
SS116 @ 12'	01/25/2023	12 ft. bgs	NC	NC	NA	0.1
SS117 @ 12'	01/25/2023	12 ft. bgs	NC	NC	NA	0.0
SS118 @ 12'	01/26/2023	12 ft. bgs	NC	NC	NA	3.3
SS119 @ 12'	01/26/2023	12 ft. bgs	NC	NC	NA	0.0
SS120 @ 12'	01/26/2023	12 ft. bgs	NC	NC	NA	0.2
SS121 @ 12'	01/26/2023	12 ft. bgs	NC	NC	NA	2.7
SS122 @ 12'	01/26/2023	12 ft. bgs	NC	NC	NA	3.0
SS123 @ 12'	01/26/2023	12 ft. bgs	NC	NC	NA	0.0
SS124 @ 12'	01/26/2023	12 ft. bgs	NC	NC	NA	0.4
SS125 @ 10'	01/26/2023	10 ft. bgs	40.346674	-104.745130	0.8	10.6
SS126 @ 12'	01/26/2023	12 ft. bgs	NC	NC	NA	0.2
SS127 @ 12'	01/27/2023	12 ft. bgs	NC	NC	NA	0.1
SS128 @ 12'	01/27/2023	12 ft. bgs	NC	NC	NA	2.9
SS129 @ 12'	01/27/2023	12 ft. bgs	NC	NC	NA	3.6
SS130 @ 12.5'	01/27/2023	12.5 ft. bgs	NC	NC	NA	0.2
SS131 @ 8'	01/27/2023	8 ft. bgs	40.347029	-104.744866	1.0	2.3
SS132 @ 10'	01/27/2023	10 ft. bgs	40.347029	-104.744866	1.0	3.7
SS133 @ 12'	01/27/2023	12 ft. bgs	NC	NC	NA	0.4
SS134 @ 12'	01/27/2023	12 ft. bgs	NC	NC	NA	0.3
SS135 @ 12'	01/27/2023	12 ft. bgs	NC	NC	NA	0.9
SS136 @ 12'	01/31/2023	12 ft. bgs	NC	NC	NA	0.2
SS137 @ 8'	02/01/2023	8 ft. bgs	40.347084	-104.744890	1.5	0.6
SS138 @ 10'	02/01/2023	10 ft. bgs	40.347084	-104.744890	1.5	1.5
SS139 @ 12'	02/01/2023	12 ft. bgs	NC	NC	NA	1.9
SS140 @ 12'	02/01/2023	12 ft. bgs	NC	NC	NA	0.4
SS141 @ 12.5'	02/02/2023	12.5 ft. bgs	NC	NC	NA	0.2
SS142 @ 12'	02/02/2023	12 ft. bgs	NC	NC	NA	3.8
SS143 @ 12'	02/02/2023	12 ft. bgs	NC	NC	NA	3.8
SS144 @ 12'	02/02/2023	12 ft. bgs	NC	NC	NA	0.3
SS145 @ 8'	02/03/2023	8 ft. bgs	40.347135	-104.744915	0.9	0.5
SS146 @ 10'	02/03/2023	10 ft. bgs	40.347135	-104.744915	0.9	14.4
SS147 @ 12'	02/03/2023	12 ft. bgs	NC	NC	NA	9.5
SS148 @ 8'	02/03/2023	8 ft. bgs	40.347157	-104.744968	1.0	1.4
SS149 @ 10'	02/03/2023	10 ft. bgs	40.347157	-104.744968	1.0	10.9
SS150 @ 12'	02/08/2023	12 ft. bgs	NC	NC	NA	4.8
BKG05 @ 8'	02/08/2023	8 ft. bgs	40.347239	-104.744838	1.1	0.2

TABLE 6
FORMER WERNING 3, 4-2 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
BKG05 @ 10'	02/08/2023	10 ft. bgs	40.347239	-104.744838	1.1	0.0
BKG06 @ 2'	02/08/2023	2 ft. bgs	40.347355	-104.745108	1.1	0.2
BKG06 @ 5'	02/08/2023	5 ft. bgs	40.347355	-104.745108	1.1	0.4
BKG06 @ 8'	02/08/2023	8 ft. bgs	40.347355	-104.745108	1.1	0.0
BKG06 @ 10'	02/08/2023	10 ft. bgs	40.347355	-104.745108	1.1	0.0
SS151 @ 12'	02/08/2023	12 ft. bgs	NC	NC	NA	0.9
SS152 @ 12'	02/08/2023	12 ft. bgs	NC	NC	NA	5.8
SS153 @ 8'	02/08/2023	8 ft. bgs	40.347092	-104.745242	0.8	0.2
SS154 @ 10'	02/08/2023	10 ft. bgs	40.347092	-104.745242	0.8	0.1
SS155 @ 10'	02/09/2023	10 ft. bgs	40.347138	-104.744906	2.0	1.9
SS156 @ 8'	02/09/2023	8 ft. bgs	40.347187	-104.744942	1.1	1.4
SS157 @ 10'	02/09/2023	10 ft. bgs	40.347187	-104.744942	1.1	0.3
SS158 @ 12'	02/09/2023	12 ft. bgs	NC	NC	NA	5.6
SS159 @ 12'	02/09/2023	12 ft. bgs	NC	NC	NA	0.2
SS160 @ 12'	02/09/2023	12 ft. bgs	NC	NC	NA	0.4
SS161 @ 12'	02/10/2023	12 ft. bgs	NC	NC	NA	0.0
SS162 @ 8'	02/10/2023	8 ft. bgs	40.347148	-104.745219	0.8	0.9
SS163 @ 10'	02/10/2023	10 ft. bgs	40.347148	-104.745219	0.8	0.2
BKG07 @ 2'	2/10/2023	2 ft. bgs	40.347313	-104.745339	0.8	0.1
BKG07 @ 5'	2/10/2023	5 ft. bgs	40.347313	-104.745339	0.8	0.0
BKG07 @ 8'	2/10/2023	8 ft. bgs	40.347313	-104.745339	0.8	0.0
BKG07 @ 10'	2/10/2023	10 ft. bgs	40.347313	-104.745339	0.8	0.1
BKG08 @ 2'	2/10/2023	2 ft. bgs	40.347169	-104.745409	0.8	0.0
BKG08 @ 5'	2/10/2023	5 ft. bgs	40.347169	-104.745409	0.8	0.1
BKG08 @ 8'	2/10/2023	8 ft. bgs	40.347169	-104.745409	0.8	0.2
BKG08 @ 10'	2/10/2023	10 ft. bgs	40.347169	-104.745409	0.8	0.1
SS164 @ 8'	02/14/2023	8 ft. bgs	40.347202	-104.745197	0.8	1.2
SS165 @ 10'	02/14/2023	10 ft. bgs	40.347202	-104.745197	0.8	0.0
SS166 @ 12'	02/14/2023	12 ft. bgs	NC	NC	NA	0.4
SS167 @ 12'	02/14/2023	12 ft. bgs	NC	NC	NA	0.9
SS168 @ 12'	02/14/2023	12 ft. bgs	NC	NC	NA	1.5
SS169 @ 8'	02/14/2023	8 ft. bgs	40.347239	-104.744942	0.9	3.8
SS170 @ 10'	02/14/2023	10 ft. bgs	40.347239	-104.744942	0.9	4.6
SS171 @ 8'	02/14/2023	8 ft. bgs	40.347249	-104.745145	0.8	0.4
SS172 @ 10'	02/14/2023	10 ft. bgs	40.347249	-104.745145	0.8	0.0
SS173 @ 12'	02/14/2023	12 ft. bgs	NC	NC	NA	1.7
SS174 @ 8'	02/17/2023	8 ft. bgs	40.347293	-104.745110	0.8	0.9
SS175 @ 10'	02/17/2023	10 ft. bgs	40.347293	-104.745110	0.8	5.8
SS176 @ 12'	02/17/2023	12 ft. bgs	NC	NC	NA	3.5
SS177 @ 8'	2/21/2023	8 ft. bgs	40.347296	-104.744973	1.1	0.9
SS178 @ 10'	2/21/2023	10 ft. bgs	40.347296	-104.744973	1.1	3.5
SS179 @ 8'	2/21/2023	8 ft. bgs	40.347315	-104.745041	1.1	4.4
SS180 @ 10'	2/21/2023	10 ft. bgs	40.347315	-104.745041	1.1	1.2
SS181 @ 12'	2/21/2023	12 ft. bgs	NC	NC	NA	0.8
SS182 @ 2.5'	2/21/2023	2.5 ft. bgs	40.347315	-104.745041	1.1	0.1

TABLE 6
FORMER WERNING 3, 4-2 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS183 @ 8'	2/23/2023	8 ft. bgs	40.347040	-104.745261	1.1	0.2
SS184 @ 10'	2/23/2023	10 ft. bgs	40.347040	-104.745261	1.1	0.2
SS185 @ 10'	2/23/2023	10 ft. bgs	40.347338	-104.745053	1.0	0.6
SS186 @ 12'	2/24/2023	12 ft. bgs	NC	NC	NA	1.1
SS187 @ 12'	2/24/2023	12 ft. bgs	NC	NC	NA	0.9
SS188 @ 12'	3/6/2023	12 ft. bgs	NC	NC	NA	0.1
SS189 @ 12'	3/6/2023	12 ft. bgs	NC	NC	NA	0.0
SS190 @ 12'	3/7/2023	12 ft. bgs	NC	NC	NA	0.9
SS191 @ 12'	3/7/2023	12 ft. bgs	NC	NC	NA	0.1
SS192 @ 12'	3/8/2023	12 ft. bgs	NC	NC	NA	0.4
SS193 @ 10'	3/8/2023	10 ft. bgs	40.346662	-104.745208	0.8	5.6
SS194 @ 10'	3/9/2023	10 ft. bgs	40.346655	-104.745284	0.9	7.1
SS195 @ 12'	3/9/2023	12 ft. bgs	NC	NC	NA	0.4
SS196 @ 12'	3/9/2023	12 ft. bgs	NC	NC	NA	0.5
SS197 @ 12'	3/13/2023	12 ft. bgs	NC	NC	NA	0.2
SS198 @ 12'	3/14/2023	12 ft. bgs	NC	NC	NA	7.7
SS199 @ 8'	3/14/2023	8 ft. bgs	40.346935	-104.745352	1.1	4.7
SS200 @ 10'	3/14/2023	10 ft. bgs	40.346935	-104.745352	1.1	1.1
SS201 @ 12'	3/14/2023	12 ft. bgs	NC	NC	NA	3.3
SS202 @ 8'	3/14/2023	8 ft. bgs	40.346981	-104.745317	1.1	1.9
SS203 @ 10'	3/14/2023	10 ft. bgs	40.346981	-104.745317	1.1	0.4
SS204 @ 8'	3/14/2023	8 ft. bgs	40.346874	-104.745378	1.1	0.3
SS205 @ 10'	3/14/2023	10 ft. bgs	40.346874	-104.745378	1.1	0.8
SS206 @ 12'	3/15/2023	12 ft. bgs	NC	NC	NA	1.1
SS207 @ 8'	3/15/2023	8 ft. bgs	40.346825	-104.745424	1.0	3.2
SS208 @ 10'	3/15/2023	10 ft. bgs	40.346825	-104.745424	1.0	0.9
SS209 @ 12'	3/15/2023	12 ft. bgs	NC	NC	NA	0.7
SS210 @ 12'	3/15/2023	12 ft. bgs	NC	NC	NA	0.5
SS211 @ 10'	3/16/2023	10 ft. bgs	40.346612	-104.745344	0.9	12.8
SS212 @ 12'	3/16/2023	12 ft. bgs	NC	NC	NA	0.9
SS213 @ 8'	3/16/2023	8 ft. bgs	40.346785	-104.745449	0.9	0.5
SS214 @ 10'	3/16/2023	10 ft. bgs	40.346785	-104.745449	0.9	3.9
SS215 @ 12'	3/16/2023	12 ft. bgs	NC	NC	NA	1.1
SS216 @ 10'	3/16/2023	10 ft. bgs	40.346631	-104.745409	0.9	9.7
SS217 @ 12'	3/17/2023	12 ft. bgs	NC	NC	NA	0.4
SS218 @ 8'	3/17/2023	8 ft. bgs	40.346744	-104.745497	0.8	0.1
SS219 @ 10'	3/17/2023	10 ft. bgs	40.346744	-104.745497	0.8	0.5
SS220 @ 10'	3/17/2023	10 ft. bgs	40.346638	-104.745486	0.8	8.2
SS221 @ 8'	3/17/2023	8 ft. bgs	40.346681	-104.745518	0.8	0.3
SS222 @ 10'	3/17/2023	10 ft. bgs	40.346681	-104.745518	0.8	4.5
SS223 @ 12'	3/17/2023	12 ft. bgs	NC	NC	NA	0.1
SS224 @ 10'	3/17/2023	10 ft. bgs	40.346794	-104.745459	0.9	0.2
SS225 @ 12'	3/17/2023	12 ft. bgs	NC	NC	NA	0.3
SS226 @ 10'	3/17/2023	10 ft. bgs	40.346784	-104.744659	0.9	0.4
SS227 @ 12'	3/17/2023	12 ft. bgs	NC	NC	NA	0.2

TABLE 6
FORMER WERNING 3, 4-2 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS228 @ 2.5'	3/18/2023	2.5 ft. bgs	40.346798	-104.745458	0.8	0.1

Notes:

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum 1983 (NAD83) UTM Zone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

in. = Inches

bgs = Below ground surface

NC = Not collected

NA = Not applicable

= Source material characterization sample, excavated and transported off-site for disposal.

= Sample material excavated and transported off-site for disposal.

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 12, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

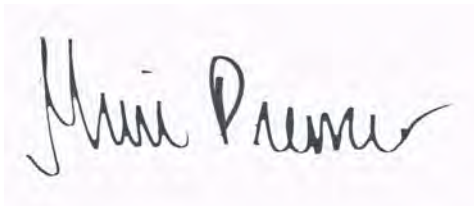
Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2201071

Enclosed are the results of analyses for samples received by Summit Scientific on 01/10/22 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premer", is shown on a light pink background.

Muri Premer For Paul Shrewsbury
President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PWV01-B@5'	2201071-01	Soil	01/10/22 11:30	01/10/22 15:00
PWV01-N@4'	2201071-02	Soil	01/10/22 11:35	01/10/22 15:00

Summit Scientific

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

Summit Scientific

S₂

2201071

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Werning 3,4-2 Tank Battery
Sampler Name: Mike Connolly Project Number: MA

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAHs	On Hold			
1	PWV01-B @ 5'	1/10/22	1130	3			X			X				X	X	X	X	X	X			pH, EC, SAR by saturated paste
2	PWV01-N @ 4'		1135	3			X			X				X	X	X	X	X				
3	PWV01-W @ 4'		1140	3			X			X									X			
4	PWV01-S @ 4'		1145	3			X			X									X			
5	PWV01-E @ 4'		1150	3			X			X									X			
6																						
7																						
8																						
9																						
10																						

Relinquished by: <u>M. Connolly</u>	Date/Time: <u>1/10/22 1500</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u></u>	Turn Around Time (Check)	Notes:
				Same Day <u>X</u> 72 hours <u>—</u>	
				24 hours <u>—</u> Standard <u>—</u>	
				48 hours <u>—</u>	
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time: <u></u>	Received by: <u>[Signature]</u>	Date/Time: <u>1/10/22 1500</u>	Sample Integrity:	
Relinquished by: <u></u>	Date/Time: <u></u>	Received by: <u></u>	Date/Time: <u></u>	Temperature Upon Receipt: <u>7.7</u>	
				Samples Intact: <u>(Yes)</u> No	

S₂

2201071

Sample Receipt Checklist

S2 Work Order#

Client: RBC TasmanClient Project ID: Warning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____
☐ ☒ ☐ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>17</u>
-----------	-----------

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<u>-</u>			<u>ON ICE</u>
Were all samples received intact ⁽¹⁾ ?	<u>-</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>-</u>			
If custody seals are present, are they intact ⁽¹⁾ ?	<u>-</u>			
Are samples with holding times due within 48 hours sample due within 48 hours present?	<u>-</u>			<u>Same day</u>
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u>-</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>-</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>-</u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u>-</u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<u>-</u>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.			<u>-</u>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<u>-</u>	
If dissolved metals are requested, were samples field filtered?			<u>-</u>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

[Signature]
Custodian Printed Name or Initials

11022
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

PWV01-B@5'
2201071-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/22 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFA0137	01/10/22	01/10/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.65	0.50	"	"	"	"	"	"	

Date Sampled: **01/10/22 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		140 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		115 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/22 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	82	50	mg/kg	1	BFA0138	01/10/22	01/10/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/22 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		65.3 %	30-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

PWV01-B@5'
2201071-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/10/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0407	0.0100	mg/L	1	BFA0141	01/11/22	01/12/22	EPA 6020B	

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

Date Sampled: **01/10/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	24.6	0.0533	mg/L dry	1	BFA0139	01/10/22	01/12/22	EPA 6020B	
Magnesium	9.68	0.0533	"	"	"	"	"	"	
Sodium	8.37	0.0533	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/10/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.362	0.00100	units	1	BFA0174	01/12/22	01/12/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.8		%	1	BFA0152	01/11/22	01/11/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/10/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.369	0.0100	mmhos/cm	1	BFA0154	01/11/22	01/11/22	EPA 120.1	

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

PWV01-B@5'
2201071-01 (Soil)

Summit Scientific

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

Date Sampled: **01/10/22 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.16			pH Units	1	BFA0153	01/11/22	01/11/22	EPA 9045D	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

PWV01-N@4'
2201071-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/22 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFA0137	01/10/22	01/10/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.2	0.50	"	"	"	"	"	"	

Date Sampled: **01/10/22 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/22 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0138	01/10/22	01/10/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/22 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		75.0 %	30-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

PWV01-N@4'
2201071-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/10/22 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0720	0.0100	mg/L	1	BFA0141	01/11/22	01/12/22	EPA 6020B	

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

Date Sampled: **01/10/22 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.5	0.0601	mg/L dry	1	BFA0139	01/10/22	01/12/22	EPA 6020B	
Magnesium	14.3	0.0601	"	"	"	"	"	"	
Sodium	4.98	0.0601	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/10/22 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.192	0.00100	units	1	BFA0174	01/12/22	01/12/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/22 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.2		%	1	BFA0152	01/11/22	01/11/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/10/22 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.382	0.0100	mmhos/cm	1	BFA0154	01/11/22	01/11/22	EPA 120.1	

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

PWV01-N@4'
2201071-02 (Soil)

Summit Scientific

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

Date Sampled: **01/10/22 11:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.95			pH Units	1	BFA0153	01/11/22	01/11/22	EPA 9045D	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFA0137 - EPA 5030 Soil MS

Blank (BFA0137-BLK1)

Prepared: 01/10/22 Analyzed: 01/11/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0400		99.9	23-173			
Surrogate: Toluene-d8	0.0455		"	0.0400		114	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.7	21-167			

LCS (BFA0137-BS1)

Prepared: 01/10/22 Analyzed: 01/11/22

Benzene	0.0842	0.0020	mg/kg	0.100		84.2	70-130			
Toluene	0.104	0.0050	"	0.100		104	70-130			
Ethylbenzene	0.113	0.0050	"	0.100		113	70-130			
m,p-Xylene	0.259	0.010	"	0.200		129	70-130			
o-Xylene	0.0791	0.0050	"	0.100		79.1	70-130			
1,2,4-Trimethylbenzene	0.0980	0.0050	"	0.100		98.0	70-130			
1,3,5-Trimethylbenzene	0.0892	0.0050	"	0.100		89.2	70-130			
Naphthalene	0.109	0.0038	"	0.100		109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0422		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	21-167			

Matrix Spike (BFA0137-MS1)

Source: 2201069-01

Prepared: 01/10/22 Analyzed: 01/11/22

Benzene	0.0885	0.0020	mg/kg	0.100	ND	88.5	70-130			
Toluene	0.101	0.0050	"	0.100	ND	101	70-130			
Ethylbenzene	0.0982	0.0050	"	0.100	ND	98.2	70-130			
m,p-Xylene	0.256	0.010	"	0.200	ND	128	70-130			
o-Xylene	0.0872	0.0050	"	0.100	ND	87.2	70-130			
1,2,4-Trimethylbenzene	0.0850	0.0050	"	0.100	ND	85.0	70-130			
1,3,5-Trimethylbenzene	0.0999	0.0050	"	0.100	ND	99.9	70-130			
Naphthalene	0.0976	0.0038	"	0.100	ND	97.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0422		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		102	21-167			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFA0137 - EPA 5030 Soil MS

Matrix Spike Dup (BFA0137-MSD1)		Source: 2201069-01			Prepared: 01/10/22 Analyzed: 01/11/22					
Benzene	0.0879	0.0020	mg/kg	0.100	ND	87.9	70-130	0.680	30	
Toluene	0.0985	0.0050	"	0.100	ND	98.5	70-130	2.32	30	
Ethylbenzene	0.0956	0.0050	"	0.100	ND	95.6	70-130	2.69	30	
m,p-Xylene	0.254	0.010	"	0.200	ND	127	70-130	1.12	30	
o-Xylene	0.0871	0.0050	"	0.100	ND	87.1	70-130	0.138	30	
1,2,4-Trimethylbenzene	0.0838	0.0050	"	0.100	ND	83.8	70-130	1.46	30	
1,3,5-Trimethylbenzene	0.0987	0.0050	"	0.100	ND	98.7	70-130	1.24	30	
Naphthalene	0.108	0.0038	"	0.100	ND	108	70-130	9.88	30	
Surrogate: 1,2-Dichloroethane-d4		0.0427	"	0.0400		107	23-173			
Surrogate: Toluene-d8		0.0421	"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene		0.0414	"	0.0400		103	21-167			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFA0138 - EPA 3550A

Blank (BFA0138-BLK1)

Prepared & Analyzed: 01/10/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFA0138-BS1)

Prepared & Analyzed: 01/10/22

C10-C28 (DRO)	542	50	mg/kg	500	108	70-130
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Matrix Spike (BFA0138-MS1)

Source: 2201069-01

Prepared & Analyzed: 01/10/22

C10-C28 (DRO)	499	50	mg/kg	500	23.0	95.2	70-130
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Matrix Spike Dup (BFA0138-MSD1)

Source: 2201069-01

Prepared & Analyzed: 01/10/22

C10-C28 (DRO)	486	50	mg/kg	500	23.0	92.6	70-130	2.65	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

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

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

Batch BFA0141 - EPA 3050B

Blank (BFA0141-BLK1)

Prepared: 01/11/22 Analyzed: 01/12/22

Boron ND 0.0100 mg/L

LCS (BFA0141-BS1)

Prepared: 01/11/22 Analyzed: 01/12/22

Boron 4.80 0.0100 mg/L 5.00 96.0 80-120

Matrix Spike (BFA0141-MS1)

Source: 2201069-01

Prepared: 01/11/22 Analyzed: 01/12/22

Boron 4.90 0.0100 mg/L 5.00 0.125 95.5 75-125

Matrix Spike Dup (BFA0141-MSD1)

Source: 2201069-01

Prepared: 01/11/22 Analyzed: 01/12/22

Boron 5.00 0.0100 mg/L 5.00 0.125 97.5 75-125 1.97 25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

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

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

Batch BFA0139 - General Preparation

Blank (BFA0139-BLK1)

Prepared: 01/10/22 Analyzed: 01/11/22

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

LCS (BFA0139-BS1)

Prepared: 01/10/22 Analyzed: 01/11/22

Calcium	5.30	0.0500	mg/L wet	5.00	106	70-130
Magnesium	4.48	0.0500	"	5.00	89.6	70-130
Sodium	4.18	0.0500	"	5.00	83.6	70-130

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/12/22 12:05

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

Summit Scientific

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

Batch BFA0152 - General Preparation

Duplicate (BFA0152-DUP1)		Source: 2112312-03		Prepared & Analyzed: 01/11/22						
% Solids	93.8		%		93.7			0.172	20	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BFA0154 - General Preparation

Blank (BFA0154-BLK1)

Prepared & Analyzed: 01/11/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFA0154-BS1)

Prepared & Analyzed: 01/11/22

Specific Conductance (EC) 0.150 0.0100 mmhos/cm 0.150 100 95-105

Duplicate (BFA0154-DUP1)

Source: 2112483-06

Prepared & Analyzed: 01/11/22

Specific Conductance (EC) 0.626 0.0100 mmhos/cm 0.628 0.287 20

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/12/22 12:05

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

Summit Scientific

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

Batch BFA0153 - General Preparation

LCS (BFA0153-BS1)

Prepared & Analyzed: 01/11/22

pH	9.18	pH Units	9.18	100	95-105
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Duplicate (BFA0153-DUP1)

Source: 2112483-06

Prepared & Analyzed: 01/11/22

pH	7.88	pH Units	7.72	2.05	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/22 12:05

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 13, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

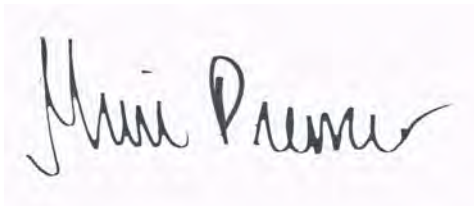
Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2201075

Enclosed are the results of analyses for samples received by Summit Scientific on 01/10/22 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premer", is displayed on a light pink rectangular background.

Muri Premer

Project Manager



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/13/22 09:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-FL@4'	2201075-01	Soil	01/10/22 11:15	01/10/22 15:00
SEP01-DL@4'	2201075-02	Soil	01/10/22 11:20	01/10/22 15:00
AST01@0-6"	2201075-06	Soil	01/10/22 11:00	01/10/22 15:00

Summit Scientific

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

Summit Scientific

S₂

2201075

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Warning 3.4.2 Tank Battery
Sampler Name: Mike Connolly Project Number: NA

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	On Hold	PAHs		
1	SEPO1-FL@4'	11/10/22	1115	3			X			X			X	X	X	X	X	X	X	X	pH, EC, SAR by saturated paste
2	SEPO1-DL@4'		1120	3			X			X			X	X	X	X	X	X	X		
3	BKGO1@0.6'		1330	1			Y			X								X			
4	BKGO1@4'		1335	1			X			X								X			
5	BKGO1@.5'		1340	1			X			X								X			
6	ASTOL@0-6"		1100	3			X			X			X	X	X						
7																					
8																					
9																					
10																					

Relinquished by: <u>M. Connolly</u>	Date/Time: <u>11/10/22 1500</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: _____	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <u>X</u> 48 hours _____	Notes:
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time: _____	Received by: <u>[Signature]</u>	Date/Time: <u>11/10/22 1500</u>	Sample Integrity: Temperature Upon Receipt: <u>7.7</u> Samples Intact: <u>Yes</u> No	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____		

S₂

2201075

Sample Receipt Checklist

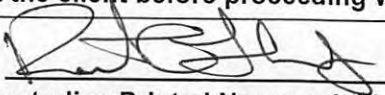
S2 Work Order# _____

Client: PocitosmanClient Project ID: Warning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>77</u>
-----------	-----------

Thermometer ID: G86A9201901378

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


Custodian Printed Name or Initials11022
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/22 09:38

SEP01-FL@4'
2201075-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/22 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFA0146	01/11/22	01/12/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/10/22 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/22 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0150	01/11/22	01/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/22 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		126 %	30-150		"	"	"	"	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/22 09:38

SEP01-DL@4'
2201075-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/22 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFA0146	01/11/22	01/12/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/10/22 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/22 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0150	01/11/22	01/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/22 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		106 %	30-150		"	"	"	"	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/22 09:38

AST01@0-6"
2201075-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFA0146	01/11/22	01/12/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/10/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0150	01/11/22	01/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/22 09:38

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFA0146 - EPA 5030 Soil MS

Blank (BFA0146-BLK1)

Prepared: 01/11/22 Analyzed: 01/12/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0411		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	21-167			

LCS (BFA0146-BS1)

Prepared: 01/11/22 Analyzed: 01/12/22

Benzene	0.0705	0.0020	mg/kg	0.100		70.5	70-130			
Toluene	0.0830	0.0050	"	0.100		83.0	70-130			
Ethylbenzene	0.0752	0.0050	"	0.100		75.2	70-130			
m,p-Xylene	0.153	0.010	"	0.200		76.5	70-130			
o-Xylene	0.0778	0.0050	"	0.100		77.8	70-130			
1,2,4-Trimethylbenzene	0.0730	0.0050	"	0.100		73.0	70-130			
1,3,5-Trimethylbenzene	0.0770	0.0050	"	0.100		77.0	70-130			
Naphthalene	0.0826	0.0038	"	0.100		82.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0442		"	0.0400		111	20-170			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	21-167			

Matrix Spike (BFA0146-MS1)

Source: 2201075-01

Prepared: 01/11/22 Analyzed: 01/12/22

Benzene	0.0749	0.0020	mg/kg	0.100	ND	74.9	70-130			
Toluene	0.0741	0.0050	"	0.100	ND	74.1	70-130			
Ethylbenzene	0.0799	0.0050	"	0.100	ND	79.9	70-130			
m,p-Xylene	0.161	0.010	"	0.200	ND	80.4	70-130			
o-Xylene	0.0779	0.0050	"	0.100	ND	77.9	70-130			
1,2,4-Trimethylbenzene	0.0778	0.0050	"	0.100	ND	77.8	70-130			
1,3,5-Trimethylbenzene	0.0843	0.0050	"	0.100	ND	84.3	70-130			
Naphthalene	0.0938	0.0038	"	0.100	ND	93.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0400		99.8	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.2	21-167			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/13/22 09:38

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFA0146 - EPA 5030 Soil MS

Matrix Spike Dup (BFA0146-MSD1)	Source: 2201075-01			Prepared: 01/11/22 Analyzed: 01/12/22						
Benzene	0.0736	0.0020	mg/kg	0.100	ND	73.6	70-130	1.78	30	
Toluene	0.0764	0.0050	"	0.100	ND	76.4	70-130	3.11	30	
Ethylbenzene	0.0787	0.0050	"	0.100	ND	78.7	70-130	1.55	30	
m,p-Xylene	0.160	0.010	"	0.200	ND	79.8	70-130	0.712	30	
o-Xylene	0.0772	0.0050	"	0.100	ND	77.2	70-130	0.929	30	
1,2,4-Trimethylbenzene	0.0853	0.0050	"	0.100	ND	85.3	70-130	9.16	30	
1,3,5-Trimethylbenzene	0.0861	0.0050	"	0.100	ND	86.1	70-130	2.18	30	
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130	10.4	30	
Surrogate: 1,2-Dichloroethane-d4	0.0417		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.0	21-167			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/13/22 09:38

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFA0150 - EPA 3550A

Blank (BFA0150-BLK1)

Prepared: 01/11/22 Analyzed: 01/12/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFA0150-BS1)

Prepared: 01/11/22 Analyzed: 01/12/22

C10-C28 (DRO)	530	50	mg/kg	500	106	70-130
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Matrix Spike (BFA0150-MS1)

Source: 2201075-01

Prepared: 01/11/22 Analyzed: 01/12/22

C10-C28 (DRO)	538	50	mg/kg	500	13.4	105	70-130
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Matrix Spike Dup (BFA0150-MSD1)

Source: 2201075-01

Prepared: 01/11/22 Analyzed: 01/12/22

C10-C28 (DRO)	575	50	mg/kg	500	13.4	112	70-130	6.69	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/13/22 09:38

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 07, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

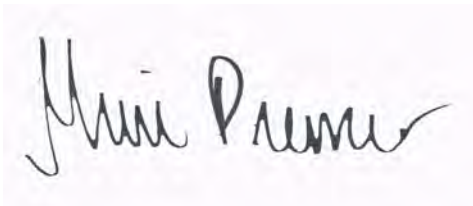
Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2202316

Enclosed are the results of analyses for samples received by Summit Scientific on 02/24/22 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premer", is displayed on a light purple rectangular background.

Muri Premer

Project Manager



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/07/22 12:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	2202316-01	Water	02/24/22 09:05	02/24/22 16:00

Summit Scientific

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

Summit Scientific

S₂

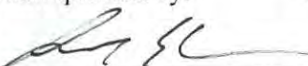

2202316

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Werning 3,4-2 Tank Battery
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR				
1	6W01	2/24/22	905	4	X				X					X	X	X					pH, EC, SAR by saturated paste
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 2/24/22	Received by: Tasman's Lock Box	Date/Time: 2/24/22	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 2/24/22 1600	Sample Integrity: Temperature Upon Receipt: 3.1	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

2202316

Sample Receipt Checklist

S2 Work Order#

Client: Doc. HasmanClient Project ID: Warning 3.4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #: _____

Matrix (check all that apply):

☐ Air☐ Soil/Solid☒ Water☐ Other:

(Describe)

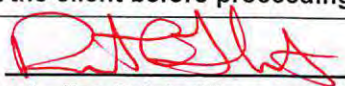
Temp (°C)

3.1

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ICE</u>
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>HCl</u>
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

 Custodian Printed Name or Initials

2-24-22
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/07/22 12:28

GW01
2202316-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/24/22 09:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	1.1	1.0	ug/l	1	BFB0310	03/01/22	03/03/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	5.0	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	8.2	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/24/22 09:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		136 %	21-167		"	"	"	"	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/07/22 12:28

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFB0310 - EPA 5030 Water MS

Blank (BFB0310-BLK1)

Prepared: 03/01/22 Analyzed: 03/03/22

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.4	21-167			

LCS (BFB0310-BS1)

Prepared: 03/01/22 Analyzed: 03/03/22

Benzene	35.8	1.0	ug/l	41.7		86.0	51-132			
Toluene	40.0	1.0	"	41.7		95.9	51-138			
Ethylbenzene	41.9	1.0	"	41.7		100	58-146			
m,p-Xylene	82.6	2.0	"	83.3		99.1	57-144			
o-Xylene	42.0	1.0	"	41.7		101	53-146			
Naphthalene	39.9	1.0	"	41.7		95.7	70-130			
1,2,4-Trimethylbenzene	43.6	1.0	"	41.7		105	70-130			
1,3,5-Trimethylbenzene	47.4	1.0	"	41.7		114	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.3		109	23-173			
Surrogate: Toluene-d8	13.7		"	13.3		103	20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	21-167			

Matrix Spike (BFB0310-MS1)

Source: 2202344-08

Prepared: 03/01/22 Analyzed: 03/03/22

Benzene	36.6	1.0	ug/l	41.7	ND	87.9	34-141			
Toluene	41.2	1.0	"	41.7	ND	98.8	27-151			
Ethylbenzene	41.9	1.0	"	41.7	ND	100	29-160			
m,p-Xylene	82.1	2.0	"	83.3	ND	98.6	20-166			
o-Xylene	41.9	1.0	"	41.7	ND	101	33-159			
Naphthalene	43.1	1.0	"	41.7	ND	103	70-130			
1,2,4-Trimethylbenzene	44.3	1.0	"	41.7	ND	106	70-130			
1,3,5-Trimethylbenzene	46.9	1.0	"	41.7	ND	112	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.3		112	23-173			
Surrogate: Toluene-d8	13.7		"	13.3		103	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		100	21-167			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/07/22 12:28

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFB0310 - EPA 5030 Water MS

Matrix Spike Dup (BFB0310-MSD1)	Source: 2202344-08			Prepared: 03/01/22 Analyzed: 03/03/22						
Benzene	35.8	1.0	ug/l	41.7	ND	85.8	34-141	2.40	30	
Toluene	40.1	1.0	"	41.7	ND	96.3	27-151	2.63	30	
Ethylbenzene	42.6	1.0	"	41.7	ND	102	29-160	1.80	30	
m,p-Xylene	83.2	2.0	"	83.3	ND	99.8	20-166	1.25	30	
o-Xylene	42.5	1.0	"	41.7	ND	102	33-159	1.38	30	
Naphthalene	47.6	1.0	"	41.7	ND	114	70-130	9.97	30	
1,2,4-Trimethylbenzene	44.5	1.0	"	41.7	ND	107	70-130	0.586	30	
1,3,5-Trimethylbenzene	48.4	1.0	"	41.7	ND	116	70-130	3.29	30	
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.3		112	23-173			
Surrogate: Toluene-d8	13.5		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.5	21-167			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/07/22 12:28

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 01, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2202207

Enclosed are the results of analyses for samples received by Summit Scientific on 02/16/22 14:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', written in a cursive style.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01-B@3'	2202207-01	Soil	02/16/22 12:52	02/16/22 14:15
AST01-W@1.5'	2202207-03	Soil	02/16/22 12:56	02/16/22 14:15

Summit Scientific

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

Summit Scientific

2202207

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020

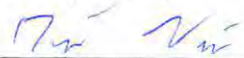
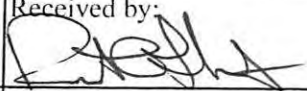
Phone: 303-487-1228

Project Name: Werning 3, 4-2 Tank Battery

Sampler Name: David Vigil

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	TMBs (1,2,4)&(1,3,5)	PAH - 915	Metals - 915		
1	ASTOI-B 03'	2/16/22	1252	3			X			X			X	X	X	X	X	X	pH, EC, SAR by saturated paste 4010		
2	ASTOI-NC 1.5'		1254	3			X			X								X			
3	ASTOI-W 01.5'		1256	3			X			X			X	X	X	X	X				
4	ASTOI-S 01.5'		1258	3			X			X								X			
5	ASTOI-E 01.5'		1300	3			X			X								X			
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 2/16/22 1415	Received by: Tasman's Lock Box	Date/Time:	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 2/16/22 1415	Sample Integrity: Temperature Upon Receipt: 5.3	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

Sample Receipt Checklist

S2 Work Order#

2202207

Client: ROC/TasmanClient Project ID: Werning 3, 4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

Matrix (check all that apply):

☐ Air☐ Soil/Solid☐ Water☐ Other:

(Describe)

Temp (°C)

5.3

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	in Ice
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

Custodian Printed Name or Initials

Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

AST01-B@3'
2202207-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/16/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0182	02/16/22	02/17/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	0.019	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	14	0.50	"	"	"	"	"	"	

Date Sampled: **02/16/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		101 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/16/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0183	02/16/22	02/17/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/16/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		135 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

AST01-B@3'
2202207-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/16/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0187	02/17/22	02/19/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0217	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0642	0.00500	"	"	"	"	"	"	

Date Sampled: **02/16/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		66.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		68.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/16/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.197	0.0100	mg/L	1	BFC0525	03/23/22	03/24/22	EPA 6020B	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/16/22 12:52**

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

AST01-B@3'
2202207-01 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0033	03/02/22	03/02/22	EPA 7196A
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **02/16/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	3.02	0.0545	mg/L dry	1	BFC0521	03/23/22	03/25/22	EPA 6020B	
Magnesium	2.00	0.0545	"	"	"	"	"	"	
Sodium	1.67	0.0545	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/16/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.183	0.00100	units	1	BFC0603	03/25/22	03/25/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/16/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.21	0.0100	mmhos/cm	1	BFC0529	03/23/22	03/23/22	EPA 120.1	

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

Date Sampled: **02/16/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	5.88		pH Units	1	BFC0528	03/23/22	03/23/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

AST01-W@1.5'
2202207-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/16/22 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0182	02/16/22	02/17/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	0.021	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	18	0.50	"	"	"	"	"	"	

Date Sampled: **02/16/22 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		96.7 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		75.6 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/16/22 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0183	02/16/22	02/17/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/16/22 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		133 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

AST01-W@1.5'
2202207-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/16/22 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0187	02/17/22	02/19/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0144	0.00500	"	"	"	"	"	"	

Date Sampled: **02/16/22 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/16/22 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0296	0.0100	mg/L	1	BFC0525	03/23/22	03/24/22	EPA 6020B	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/16/22 12:56**

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

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

AST01-W@1.5'
2202207-03 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0033	03/02/22	03/02/22	EPA 7196A
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **02/16/22 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	3.03	0.0547	mg/L dry	1	BFC0521	03/23/22	03/25/22	EPA 6020B	
Magnesium	1.24	0.0547	"	"	"	"	"	"	
Sodium	0.562	0.0547	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/16/22 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0687	0.00100	units	1	BFC0603	03/25/22	03/25/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/16/22 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.25	0.0100	mmhos/cm	1	BFC0529	03/23/22	03/23/22	EPA 120.1	

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

Date Sampled: **02/16/22 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	3.52		pH Units	1	BFC0528	03/23/22	03/23/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFB0182 - EPA 5030 Soil MS

Blank (BFB0182-BLK1)

Prepared: 02/16/22 Analyzed: 02/17/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0337		"	0.0400		84.2	70-130			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0369		"	0.0400		92.2	70-130			

LCS (BFB0182-BS1)

Prepared: 02/16/22 Analyzed: 02/17/22

Benzene	0.0600	0.0020	mg/kg	0.0750		80.0	70-130			
Toluene	0.0666	0.0050	"	0.0750		88.8	70-130			
Ethylbenzene	0.0648	0.0050	"	0.0750		86.4	70-130			
m,p-Xylene	0.136	0.010	"	0.150		90.8	70-130			
o-Xylene	0.0691	0.0050	"	0.0750		92.1	70-130			
1,2,4-Trimethylbenzene	0.0676	0.0050	"	0.0750		90.2	70-130			
1,3,5-Trimethylbenzene	0.0666	0.0050	"	0.0750		88.8	70-130			
Naphthalene	0.0536	0.0038	"	0.0750		71.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0311		"	0.0400		77.8	70-130			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.0	70-130			

Matrix Spike (BFB0182-MS1)

Source: 2202198-01

Prepared: 02/16/22 Analyzed: 02/17/22

Benzene	0.0595	0.0020	mg/kg	0.0750	ND	79.4	70-130			
Toluene	0.0685	0.0050	"	0.0750	ND	91.4	70-130			
Ethylbenzene	0.0678	0.0050	"	0.0750	ND	90.4	70-130			
m,p-Xylene	0.142	0.010	"	0.150	ND	94.6	70-130			
o-Xylene	0.0713	0.0050	"	0.0750	ND	95.0	70-130			
1,2,4-Trimethylbenzene	0.0702	0.0050	"	0.0750	ND	93.6	70-130			
1,3,5-Trimethylbenzene	0.0709	0.0050	"	0.0750	ND	94.5	70-130			
Naphthalene	0.0624	0.0038	"	0.0750	ND	83.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0328		"	0.0400		82.1	70-130			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	70-130			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFB0182 - EPA 5030 Soil MS

Matrix Spike Dup (BFB0182-MSD1)	Source: 2202198-01			Prepared: 02/16/22 Analyzed: 02/17/22						
Benzene	0.0623	0.0020	mg/kg	0.0750	ND	83.1	70-130	4.58	30	
Toluene	0.0698	0.0050	"	0.0750	ND	93.1	70-130	1.87	30	
Ethylbenzene	0.0632	0.0050	"	0.0750	ND	84.3	70-130	6.96	30	
m,p-Xylene	0.134	0.010	"	0.150	ND	89.1	70-130	5.90	30	
o-Xylene	0.0694	0.0050	"	0.0750	ND	92.6	70-130	2.60	30	
1,2,4-Trimethylbenzene	0.0696	0.0050	"	0.0750	ND	92.8	70-130	0.773	30	
1,3,5-Trimethylbenzene	0.0680	0.0050	"	0.0750	ND	90.6	70-130	4.24	30	
Naphthalene	0.0691	0.0038	"	0.0750	ND	92.1	70-130	10.2	30	
Surrogate: 1,2-Dichloroethane-d4	0.0343		"	0.0400		85.6	70-130			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	70-130			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFB0183 - EPA 3550A

Blank (BFB0183-BLK1)

Prepared: 02/16/22 Analyzed: 02/17/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFB0183-BS1)

Prepared: 02/16/22 Analyzed: 02/17/22

C10-C28 (DRO)	495	50	mg/kg	500	98.9	70-130
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Matrix Spike (BFB0183-MS1)

Source: 2202198-01

Prepared: 02/16/22 Analyzed: 02/17/22

C10-C28 (DRO)	427	50	mg/kg	500	ND	85.5	70-130
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Matrix Spike Dup (BFB0183-MSD1)

Source: 2202198-01

Prepared: 02/16/22 Analyzed: 02/17/22

C10-C28 (DRO)	462	50	mg/kg	500	ND	92.3	70-130	7.71	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFB0187 - EPA 5030 Soil MS

Blank (BFB0187-BLK1)

Prepared: 02/17/22 Analyzed: 02/18/22

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0256		"	0.0333		76.9		40-150			
Surrogate: Fluoranthene-d10	0.0232		"	0.0333		69.5		40-150			

LCS (BFB0187-BS1)

Prepared: 02/17/22 Analyzed: 02/18/22

Acenaphthene	0.0371	0.00500	mg/kg	0.0333		111		31-137			
Anthracene	0.0396	0.00500	"	0.0333		119		30-120			
Benzo (a) anthracene	0.0329	0.00500	"	0.0333		98.8		30-120			
Benzo (a) pyrene	0.0331	0.00500	"	0.0333		99.4		30-120			
Benzo (b) fluoranthene	0.0327	0.00500	"	0.0333		98.2		30-120			
Benzo (k) fluoranthene	0.0327	0.00500	"	0.0333		98.0		30-120			
Chrysene	0.0346	0.00500	"	0.0333		104		30-120			
Dibenz (a,h) anthracene	0.0361	0.00500	"	0.0333		108		30-120			
Fluoranthene	0.0397	0.00500	"	0.0333		119		30-120			
Fluorene	0.0362	0.00500	"	0.0333		108		30-120			
Indeno (1,2,3-cd) pyrene	0.0276	0.00500	"	0.0333		82.8		30-120			
Pyrene	0.0335	0.00500	"	0.0333		101		35-142			
1-Methylnaphthalene	0.0342	0.00500	"	0.0333		103		35-142			
2-Methylnaphthalene	0.0364	0.00500	"	0.0333		109		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0318		"	0.0333		95.3		40-150			
Surrogate: Fluoranthene-d10	0.0334		"	0.0333		100		40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFB0187 - EPA 5030 Soil MS

Matrix Spike (BFB0187-MS1)

Source: 2202199-01

Prepared: 02/17/22 Analyzed: 02/18/22

Acenaphthene	0.0279	0.00500	mg/kg	0.0333	ND	83.6	31-137				
Anthracene	0.0292	0.00500	"	0.0333	ND	87.7	30-120				
Benzo (a) anthracene	0.0262	0.00500	"	0.0333	ND	78.6	30-120				
Benzo (a) pyrene	0.0290	0.00500	"	0.0333	ND	87.1	30-120				
Benzo (b) fluoranthene	0.0259	0.00500	"	0.0333	ND	77.8	30-120				
Benzo (k) fluoranthene	0.0255	0.00500	"	0.0333	ND	76.6	30-120				
Chrysene	0.0271	0.00500	"	0.0333	ND	81.3	30-120				
Dibenz (a,h) anthracene	0.0343	0.00500	"	0.0333	ND	103	30-120				
Fluoranthene	0.0317	0.00500	"	0.0333	ND	95.0	30-120				
Fluorene	0.0302	0.00500	"	0.0333	ND	90.5	30-120				
Indeno (1,2,3-cd) pyrene	0.0399	0.00500	"	0.0333	ND	120	30-120				
Pyrene	0.0279	0.00500	"	0.0333	ND	83.6	35-142				
1-Methylnaphthalene	0.0255	0.00500	"	0.0333	ND	76.5	15-130				
2-Methylnaphthalene	0.0269	0.00500	"	0.0333	ND	80.6	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0273		"	0.0333		81.9	40-150				
Surrogate: Fluoranthene-d10	0.0281		"	0.0333		84.3	40-150				

Matrix Spike Dup (BFB0187-MSD1)

Source: 2202199-01

Prepared: 02/17/22 Analyzed: 02/18/22

Acenaphthene	0.0270	0.00500	mg/kg	0.0333	ND	80.9	31-137	3.25	30		
Anthracene	0.0268	0.00500	"	0.0333	ND	80.4	30-120	8.72	30		
Benzo (a) anthracene	0.0260	0.00500	"	0.0333	ND	78.0	30-120	0.770	30		
Benzo (a) pyrene	0.0250	0.00500	"	0.0333	ND	75.1	30-120	14.8	30		
Benzo (b) fluoranthene	0.0251	0.00500	"	0.0333	ND	75.3	30-120	3.26	30		
Benzo (k) fluoranthene	0.0246	0.00500	"	0.0333	ND	73.7	30-120	3.85	30		
Chrysene	0.0263	0.00500	"	0.0333	ND	78.9	30-120	3.01	30		
Dibenz (a,h) anthracene	0.0298	0.00500	"	0.0333	ND	89.5	30-120	14.0	30		
Fluoranthene	0.0280	0.00500	"	0.0333	ND	83.9	30-120	12.4	30		
Fluorene	0.0281	0.00500	"	0.0333	ND	84.3	30-120	7.08	30		
Indeno (1,2,3-cd) pyrene	0.0350	0.00500	"	0.0333	ND	105	30-120	13.3	30		
Pyrene	0.0261	0.00500	"	0.0333	ND	78.4	35-142	6.34	30		
1-Methylnaphthalene	0.0272	0.00500	"	0.0333	ND	81.5	15-130	6.22	50		
2-Methylnaphthalene	0.0273	0.00500	"	0.0333	ND	82.0	15-130	1.73	50		
Surrogate: 2-Methylnaphthalene-d10	0.0263		"	0.0333		78.9	40-150				
Surrogate: Fluoranthene-d10	0.0261		"	0.0333		78.4	40-150				

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

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

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

Batch BFC0525 - EPA 3050B

Blank (BFC0525-BLK1)

Prepared: 03/23/22 Analyzed: 03/24/22

Boron ND 0.0100 mg/L

LCS (BFC0525-BS1)

Prepared: 03/23/22 Analyzed: 03/24/22

Boron 4.72 0.0100 mg/L 5.00 94.5 80-120

Duplicate (BFC0525-DUP1)

Source: 2202196-01

Prepared: 03/23/22 Analyzed: 03/24/22

Boron 0.425 0.0100 mg/L 0.427 0.417 20

Matrix Spike (BFC0525-MS1)

Source: 2202196-01

Prepared: 03/23/22 Analyzed: 03/24/22

Boron 5.10 0.0100 mg/L 5.00 0.427 93.5 75-125

Matrix Spike Dup (BFC0525-MSD1)

Source: 2202196-01

Prepared: 03/23/22 Analyzed: 03/24/22

Boron 5.34 0.0100 mg/L 5.00 0.427 98.4 75-125 4.63 25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFC0033 - 3060A Mod

Blank (BFC0033-BLK1)

Prepared & Analyzed: 03/02/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFC0033-BS1)

Prepared & Analyzed: 03/02/22

Chromium, Hexavalent 27.4 0.30 mg/kg wet 25.0 109 80-120

Duplicate (BFC0033-DUP1)

Source: 2202196-01

Prepared & Analyzed: 03/02/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFC0033-MS1)

Source: 2202196-01

Prepared & Analyzed: 03/02/22

Chromium, Hexavalent 31.4 0.30 mg/kg dry 30.1 ND 104 75-125

Matrix Spike Dup (BFC0033-MSD1)

Source: 2202196-01

Prepared & Analyzed: 03/02/22

Chromium, Hexavalent 36.2 0.30 mg/kg dry 30.1 ND 120 75-125 14.3 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

04/01/22 09:19

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

Summit Scientific

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

Batch BFC0521 - General Preparation

Blank (BFC0521-BLK1)

Prepared: 03/23/22 Analyzed: 03/25/22

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

LCS (BFC0521-BS1)

Prepared: 03/23/22 Analyzed: 03/25/22

Calcium	5.38	0.0500	mg/L wet	5.00	108	70-130
Magnesium	5.35	0.0500	"	5.00	107	70-130
Sodium	5.25	0.0500	"	5.00	105	70-130

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFC0529 - General Preparation

Blank (BFC0529-BLK1)

Prepared & Analyzed: 03/23/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFC0529-BS1)

Prepared & Analyzed: 03/23/22

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BFC0529-DUP1)

Source: 2202192-01

Prepared & Analyzed: 03/23/22

Specific Conductance (EC) 1.53 0.0100 mmhos/cm 1.59 3.46 20

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFC0528 - General Preparation

LCS (BFC0528-BS1)

Prepared & Analyzed: 03/23/22

pH	9.00	pH Units	9.18	98.0	95-105
----	------	----------	------	------	--------

Duplicate (BFC0528-DUP1)

Source: 2202192-01

Prepared & Analyzed: 03/23/22

pH	7.86	pH Units	7.88	0.254	20
----	------	----------	------	-------	----

Summit Scientific

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



Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Summit Scientific
Paul Shrewsbury
4653 Table Mountain Dr
Golden, CO 80403

RE: 2202207
Work Order Number: 2202447

March 19, 2022

Attention Paul Shrewsbury:

Fremont Analytical, Inc. received 2 sample(s) on 2/18/2022 for the analyses presented in the following report.

Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Muri Premer

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

www.fremontanalytical.com



Date: 03/19/2022

CLIENT: Summit Scientific
Project: 2202207
Work Order: 2202447

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2202447-001	AST01-B@3'	02/16/2022 12:52 PM	02/18/2022 4:39 PM
2202447-001	AST01-B@3'	02/16/2022 12:52 PM	02/18/2022 4:39 PM
2202447-002	AST01-W@1.5'	02/16/2022 12:56 PM	02/18/2022 4:39 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

CLIENT: Summit Scientific**Project:** 2202207

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Metals by EPA Method 6020 data is presented in this report. Boron by the Hot Water Soluble prep as well as the remaining analyses have been placed on hold and will be analyzed by Summit Scientific.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Work Order: 2202447
Date Reported: 3/19/2022

CLIENT: Summit Scientific

Project: 2202207

Lab ID: 2202447-001

Client Sample ID: AST01-B@3'

Collection Date: 2/16/2022 12:52:00 PM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35562

Analyst: EH

Arsenic	1.92	0.197	D	mg/Kg-dry	2	3/14/2022 4:25:02 PM
Barium	43.6	0.986	D	mg/Kg-dry	2	3/14/2022 4:25:02 PM
Cadmium	ND	0.329	D	mg/Kg-dry	2	3/14/2022 4:25:02 PM
Copper	4.55	1.64	D	mg/Kg-dry	2	3/14/2022 4:25:02 PM
Lead	3.50	0.329	D	mg/Kg-dry	2	3/14/2022 4:25:02 PM
Nickel	4.82	0.822	D	mg/Kg-dry	2	3/14/2022 4:25:02 PM
Selenium	1.15	0.329	D	mg/Kg-dry	2	3/14/2022 4:25:02 PM
Silver	ND	0.247	D	mg/Kg-dry	2	3/14/2022 4:25:02 PM
Zinc	17.3	2.88	D	mg/Kg-dry	2	3/14/2022 4:25:02 PM

Sample Moisture (Percent Moisture)

Batch ID: R73514

Analyst: MCH

Percent Moisture	7.81	0.500		wt%	1	2/22/2022 4:59:51 PM
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Lab ID: 2202447-002

Client Sample ID: AST01-W@1.5'

Collection Date: 2/16/2022 12:56:00 PM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35562

Analyst: EH

Arsenic	2.63	0.224	D	mg/Kg-dry	2	3/14/2022 4:27:46 PM
Barium	120	1.12	D	mg/Kg-dry	2	3/14/2022 4:27:46 PM
Cadmium	ND	0.374	D	mg/Kg-dry	2	3/14/2022 4:27:46 PM
Copper	9.79	1.87	D	mg/Kg-dry	2	3/14/2022 4:27:46 PM
Lead	8.44	0.374	D	mg/Kg-dry	2	3/14/2022 4:27:46 PM
Nickel	8.82	0.935	D	mg/Kg-dry	2	3/14/2022 4:27:46 PM
Selenium	1.77	0.374	D	mg/Kg-dry	2	3/14/2022 4:27:46 PM
Silver	ND	0.281	D	mg/Kg-dry	2	3/14/2022 4:27:46 PM
Zinc	44.4	3.27	D	mg/Kg-dry	2	3/14/2022 4:27:46 PM

Sample Moisture (Percent Moisture)

Batch ID: R73514

Analyst: MCH

Percent Moisture	21.4	0.500		wt%	1	2/22/2022 4:59:51 PM
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Fremont
Analytical

Analytical Report

Work Order: 2202447
Date Reported: 3/19/2022

CLIENT: Summit Scientific

Project: 2202207



Date: 3/19/2022

Work Order: 2202447
CLIENT: Summit Scientific
Project: 2202207

QC SUMMARY REPORT
Total Metals by EPA Method 6020B

Sample ID: MB-35562		SampType: MBLK		Units: mg/Kg		Prep Date: 3/2/2022			RunNo: 73966		
Client ID: MBLKS		Batch ID: 35562		Analysis Date: 3/14/2022						SeqNo: 1515491	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.198									D
Barium	ND	0.992									D
Cadmium	ND	0.331									D
Copper	ND	1.65									D
Lead	ND	0.331									D
Nickel	ND	0.826									D
Selenium	ND	0.331									D
Silver	ND	0.248									D
Zinc	ND	2.89									D

Sample ID: LCS-35562	SampType: LCS	Units: mg/Kg				Prep Date: 3/2/2022			RunNo: 73966		
Client ID: LCSS	Batch ID: 35562	Analysis Date: 3/14/2022							SeqNo: 1515492		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	35.5	0.162	33.78	0	105	80	120				D
Barium	35.5	0.811	33.78	0	105	80	120				D
Cadmium	1.91	0.270	1.689	0	113	80	120				D
Copper	36.6	1.35	33.78	0	108	80	120				D
Lead	17.4	0.270	16.89	0	103	80	120				D
Nickel	35.2	0.676	33.78	0	104	80	120				D
Selenium	3.33	0.270	3.378	0	98.6	80	120				D
Silver	1.86	0.203	1.689	0	110	80	120				D
Zinc	35.5	2.36	33.78	0	105	80	120				D

Sample ID: 2202270-003AMS		SampType: MS		Units: mg/Kg-dry		Prep Date: 3/2/2022		RunNo: 73966			
Client ID: BATCH		Batch ID: 35562				Analysis Date: 3/14/2022		SeqNo: 1515497			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	41.3	0.184	38.40	2.191	102	75	125				D

Work Order: 2202447
CLIENT: Summit Scientific
Project: 2202207

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: 2202270-003AMS		SampType: MS		Units: mg/Kg-dry		Prep Date: 3/2/2022		RunNo: 73966			
Client ID: BATCH		Batch ID: 35562				Analysis Date: 3/14/2022		SeqNo: 1515497			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	138	0.922	38.40	83.49	142	75	125				DS
Cadmium	2.06	0.307	1.920	0.04687	105	75	125				D
Copper	40.2	1.54	38.40	1.731	100	75	125				D
Lead	22.8	0.307	19.20	3.583	99.8	75	125				D
Nickel	41.2	0.768	38.40	2.491	101	75	125				D
Selenium	4.76	0.307	3.840	0.8034	103	75	125				D
Silver	2.00	0.230	1.920	0	104	75	125				D
Zinc	50.9	2.69	38.40	12.32	101	75	125				D

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

Sample ID: 2202270-003AMSD		SampType: MSD		Units: mg/Kg-dry		Prep Date: 3/2/2022		RunNo: 73966			
Client ID: BATCH		Batch ID: 35562				Analysis Date: 3/14/2022		SeqNo: 1515498			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	41.8	0.191	39.86	2.191	99.3	75	125	41.25	1.30	20	D
Barium	127	0.957	39.86	83.49	109	75	125	137.8	8.27	20	D
Cadmium	2.12	0.319	1.993	0.04687	104	75	125	2.058	2.88	20	D
Copper	41.9	1.59	39.86	1.731	101	75	125	40.17	4.15	20	D
Lead	23.2	0.319	19.93	3.583	98.4	75	125	22.75	1.95	20	D
Nickel	42.6	0.797	39.86	2.491	101	75	125	41.24	3.36	20	D
Selenium	4.62	0.319	3.986	0.8034	95.8	75	125	4.764	2.99	20	D
Silver	2.10	0.239	1.993	0	105	75	125	2.000	4.77	20	D
Zinc	52.2	2.79	39.86	12.32	99.9	75	125	50.92	2.41	20	D

Client Name: **SUMSCI**
 Logged by: **Gabrielle Coeuille**

Work Order Number: **2202447**
 Date Received: **2/18/2022 4:39:00 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
 2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
 4. Shipping container/cooler in good condition? Yes ☒ No ☐
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒
 6. Was an attempt made to cool the samples? Yes ☐ No ☒ NA ☐
 7. Were all items received at a temperature of >2°C to 6°C * Unknown prior to receipt Yes ☐ No ☐ NA ☒
 8. Sample(s) in proper container(s)? Yes ☒ No ☐
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
 10. Are samples properly preserved? Yes ☒ No ☐
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
 12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☒
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
 14. Does paperwork match bottle labels? Yes ☒ No ☐
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
 16. Is it clear what analyses were requested? Yes ☒ No ☐
 17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample 1	13.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



Fremont
Analytical

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 2-17-22 Page: 1 of 1

Project Name: 2202207

Laboratory Project No (Internal): 2202447

Special Remarks:

Client: Summit Scientific

Project No:

Address: 4653 Table Mountain Drive

Collected by:

City, State, Zip: Golden, CO. 80403

Location:

Telephone: 303-277-9310

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: mpremer@ss2scientific.com, pshrewsbury@ss2scientific.com

Sample Name

Sample Date

Sample Time

Sample Type (Matrix)*

Comments

1 ASTOI-BO31

2-16-22

1252

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*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle):

Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished

Date/Time

2-17-22 1:50

Received

Date/Time

2/18/22 16:39

Relinquished

Date/Time

Received

Date/Time

Same Day ☐

Next Day ☐

2 Day ☐

3 Day ☐

Standard ☒

Turn-around Time:

Standard ☒

3 Day ☐

2 Day ☐

Next Day ☐

Same Day ☐

(specify)



Fremont
Analytical

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 2-17-22 Page: 1 of 1

Project Name: 2202207

Laboratory Project No (Internal): 2202447

Special Remarks:

Report metals only per P.S. 317/22-BB

Client: Summit Scientific

Project No:

Address: 4653 Table Mountain Drive

Collected by:

City, State, Zip: Golden, CO. 80403

Location:

Telephone: 303-277-9310

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: mpremer@ss2scientific.com, pshrewsbury@ss2scientific.com

Sample Name

Sample Date

Sample Time

Sample Type (Matrix)*

Comments

1 ASTOI-BO31

2-16-22

1252

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*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Turn-around Time:

**Metals (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

☒ Standard

☐ 3 Day

☐ 2 Day

☐ Next Day

☐ Same Day

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished

Date/Time

2-17-22 1:50

Received

Date/Time

2/18/22 16:39

Relinquished

Date/Time

2-17-22 1:50

Received

Date/Time

2/18/22 16:39



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/01/22 09:19

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 26, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2202315

Enclosed are the results of analyses for samples received by Summit Scientific on 02/24/22 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@6'	2202315-01	Soil	02/24/22 08:57	02/24/22 16:00
SS02@6'	2202315-02	Soil	02/24/22 12:00	02/24/22 16:00
SS03@2'	2202315-03	Soil	02/24/22 13:45	02/24/22 16:00
SS04@4'	2202315-04	Soil	02/24/22 14:00	02/24/22 16:00

Summit Scientific

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

Summit Scientific

S₂

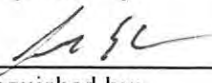
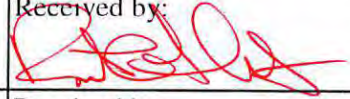
2202315

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Warning 3, 4-2 Tank Battery
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR			
1	SS01 e 6'	2/24/22	857	3			X			X				X	X	X				pH, EC, SAR by saturated paste
2	SS02 e 6'	2/24/22	1200	3			X			X				X	X	X				
3	SS03 e 2'	2/24/22	1345	3			X			X				X	X	X				
4	SS04 e 4'	2/24/22	1400	3			X			X				X	X	X				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: 	Date/Time: 2/24/22	Received by: Tasman's Lock Box	Date/Time: 2/24/22	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: 3.1 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 2/24/22 1600		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

2202315

Sample Receipt Checklist

S2 Work Order#

Client: Pocitosman Client Project ID: Warning 3.4-2 Tank BatteryShipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other ☒ Airbill #: _____Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)

3.1

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

Custodian Printed Name or Initials

Date/Time

2-24-22



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS01@6'
2202315-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/24/22 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0300	02/24/22	02/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/24/22 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0401	100 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.4 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	100 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/24/22 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0301	02/24/22	02/25/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/24/22 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.0	112 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS01@6'
2202315-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/24/22 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/24/22 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0222	66.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0212	63.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/24/22 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	5.46	0.400	"	"	"	"	"	"	
Selenium	0.312	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/24/22 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.3		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **02/24/22 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.99		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS01@6'
2202315-01 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS02@6'
2202315-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/24/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFB0300	02/24/22	02/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/24/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0405	101 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0406	101 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0403	101 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/24/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0301	02/24/22	02/25/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/24/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.4	115 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS02@6'
2202315-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0205	61.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0226	67.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.840	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	7.18	0.400	"	"	"	"	"	"	
Selenium	0.301	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.0		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **02/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.40		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS02@6'
2202315-02 (Soil)

Summit Scientific

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS03@2'
2202315-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/24/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFB0300	02/24/22	02/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/24/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0396	98.9 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0391	97.8 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.4 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/24/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0301	02/24/22	02/25/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/24/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.4	115 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS03@2'
2202315-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/24/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/24/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0163	48.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0168	50.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/24/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.27	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	67.7	0.400	"	"	"	"	"	"	
Selenium	0.646	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/24/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.2		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **02/24/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.13		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS03@2'
2202315-03 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS04@4'
2202315-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/24/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0036	0.0020	mg/kg	1	BFB0300	02/24/22	02/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/24/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0400	100 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	101 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/24/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0301	02/24/22	02/25/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/24/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.3	114 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS04@4'
2202315-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/24/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.00645	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.00722	0.00500	"	"	"	"	"	"	

Date Sampled: **02/24/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0179	53.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0194	58.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/24/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.71	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	73.0	0.400	"	"	"	"	"	"	
Selenium	0.785	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/24/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.9		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **02/24/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.74		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

SS04@4'
2202315-04 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFB0300 - EPA 5030 Soil MS

Blank (BFB0300-BLK1)

Prepared & Analyzed: 02/24/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0372		"	0.0400		93.1	70-130			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.0365		"	0.0400		91.4	70-130			

LCS (BFB0300-BS1)

Prepared & Analyzed: 02/24/22

Benzene	0.0613	0.0020	mg/kg	0.0750		81.7	70-130			
Toluene	0.0638	0.0050	"	0.0750		85.0	70-130			
Ethylbenzene	0.0639	0.0050	"	0.0750		85.2	70-130			
m,p-Xylene	0.129	0.010	"	0.150		86.1	70-130			
o-Xylene	0.0676	0.0050	"	0.0750		90.2	70-130			
1,2,4-Trimethylbenzene	0.0688	0.0050	"	0.0750		91.8	70-130			
1,3,5-Trimethylbenzene	0.0672	0.0050	"	0.0750		89.6	70-130			
Naphthalene	0.0580	0.0038	"	0.0750		77.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0380		"	0.0400		95.1	70-130			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	70-130			

Matrix Spike (BFB0300-MS1)

Source: 2202312-01

Prepared & Analyzed: 02/24/22

Benzene	0.0621	0.0020	mg/kg	0.0750	ND	82.8	70-130			
Toluene	0.0651	0.0050	"	0.0750	ND	86.8	70-130			
Ethylbenzene	0.0651	0.0050	"	0.0750	ND	86.8	70-130			
m,p-Xylene	0.130	0.010	"	0.150	ND	86.9	70-130			
o-Xylene	0.0686	0.0050	"	0.0750	ND	91.5	70-130			
1,2,4-Trimethylbenzene	0.0715	0.0050	"	0.0750	ND	95.4	70-130			
1,3,5-Trimethylbenzene	0.0688	0.0050	"	0.0750	ND	91.7	70-130			
Naphthalene	0.0795	0.0038	"	0.0750	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0407		"	0.0400		102	70-130			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	70-130			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFB0300 - EPA 5030 Soil MS

Matrix Spike Dup (BFB0300-MSD1)	Source: 2202312-01			Prepared & Analyzed: 02/24/22						
Benzene	0.0628	0.0020	mg/kg	0.0750	ND	83.8	70-130	1.15	30	
Toluene	0.0663	0.0050	"	0.0750	ND	88.4	70-130	1.83	30	
Ethylbenzene	0.0654	0.0050	"	0.0750	ND	87.2	70-130	0.368	30	
m,p-Xylene	0.133	0.010	"	0.150	ND	88.4	70-130	1.76	30	
o-Xylene	0.0699	0.0050	"	0.0750	ND	93.2	70-130	1.82	30	
1,2,4-Trimethylbenzene	0.0732	0.0050	"	0.0750	ND	97.6	70-130	2.28	30	
1,3,5-Trimethylbenzene	0.0707	0.0050	"	0.0750	ND	94.2	70-130	2.75	30	
Naphthalene	0.0843	0.0038	"	0.0750	ND	112	70-130	5.79	30	
Surrogate: 1,2-Dichloroethane-d4	0.0407		"	0.0400		102	70-130			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	70-130			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFB0301 - EPA 3550A

Blank (BFB0301-BLK1)

Prepared: 02/24/22 Analyzed: 02/25/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFB0301-BS1)

Prepared: 02/24/22 Analyzed: 02/25/22

C10-C28 (DRO)	534	50	mg/kg	500	107	70-130
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Matrix Spike (BFB0301-MS1)

Source: 2202312-01

Prepared: 02/24/22 Analyzed: 02/25/22

C10-C28 (DRO)	524	50	mg/kg	500	ND	105	70-130
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Matrix Spike Dup (BFB0301-MSD1)

Source: 2202312-01

Prepared: 02/24/22 Analyzed: 02/25/22

C10-C28 (DRO)	530	50	mg/kg	500	ND	106	70-130	1.13	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0102 - EPA 5030 Soil MS

Blank (BFC0102-BLK1)

Prepared & Analyzed: 03/07/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0195		"	0.0333		58.5	40-150			
Surrogate: Fluoranthene-d10	0.0203		"	0.0333		61.0	40-150			

LCS (BFC0102-BS1)

Prepared: 03/07/22 Analyzed: 03/08/22

Acenaphthene	0.0198	0.00500	mg/kg	0.0333		59.4	31-137			
Anthracene	0.0212	0.00500	"	0.0333		63.7	30-120			
Benzo (a) anthracene	0.0206	0.00500	"	0.0333		61.9	30-120			
Benzo (a) pyrene	0.0189	0.00500	"	0.0333		56.8	30-120			
Benzo (b) fluoranthene	0.0184	0.00500	"	0.0333		55.1	30-120			
Benzo (k) fluoranthene	0.0210	0.00500	"	0.0333		62.9	30-120			
Chrysene	0.0230	0.00500	"	0.0333		69.1	30-120			
Dibenz (a,h) anthracene	0.0269	0.00500	"	0.0333		80.7	30-120			
Fluoranthene	0.0240	0.00500	"	0.0333		72.0	30-120			
Fluorene	0.0213	0.00500	"	0.0333		64.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0291	0.00500	"	0.0333		87.4	30-120			
Pyrene	0.0231	0.00500	"	0.0333		69.4	35-142			
1-Methylnaphthalene	0.0196	0.00500	"	0.0333		58.7	35-142			
2-Methylnaphthalene	0.0195	0.00500	"	0.0333		58.6	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0194		"	0.0333		58.2	40-150			
Surrogate: Fluoranthene-d10	0.0227		"	0.0333		68.2	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0102 - EPA 5030 Soil MS

Matrix Spike (BFC0102-MS1)

Source: 2202315-01

Prepared: 03/07/22 Analyzed: 03/08/22

Acenaphthene	0.0245	0.00500	mg/kg	0.0333	ND	73.6	31-137		
Anthracene	0.0275	0.00500	"	0.0333	ND	82.4	30-120		
Benzo (a) anthracene	0.0245	0.00500	"	0.0333	ND	73.6	30-120		
Benzo (a) pyrene	0.0226	0.00500	"	0.0333	ND	67.7	30-120		
Benzo (b) fluoranthene	0.0221	0.00500	"	0.0333	ND	66.4	30-120		
Benzo (k) fluoranthene	0.0245	0.00500	"	0.0333	ND	73.6	30-120		
Chrysene	0.0251	0.00500	"	0.0333	ND	75.3	30-120		
Dibenz (a,h) anthracene	0.0298	0.00500	"	0.0333	ND	89.5	30-120		
Fluoranthene	0.0313	0.00500	"	0.0333	ND	94.0	30-120		
Fluorene	0.0247	0.00500	"	0.0333	ND	74.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0343	0.00500	"	0.0333	ND	103	30-120		
Pyrene	0.0262	0.00500	"	0.0333	ND	78.6	35-142		
1-Methylnaphthalene	0.0254	0.00500	"	0.0333	ND	76.2	15-130		
2-Methylnaphthalene	0.0260	0.00500	"	0.0333	ND	78.1	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0256		"	0.0333		76.7	40-150		
Surrogate: Fluoranthene-d10	0.0274		"	0.0333		82.3	40-150		

Matrix Spike Dup (BFC0102-MSD1)

Source: 2202315-01

Prepared: 03/07/22 Analyzed: 03/08/22

Acenaphthene	0.0200	0.00500	mg/kg	0.0333	ND	60.1	31-137	20.2	30
Anthracene	0.0223	0.00500	"	0.0333	ND	67.0	30-120	20.6	30
Benzo (a) anthracene	0.0211	0.00500	"	0.0333	ND	63.3	30-120	15.1	30
Benzo (a) pyrene	0.0193	0.00500	"	0.0333	ND	58.0	30-120	15.3	30
Benzo (b) fluoranthene	0.0192	0.00500	"	0.0333	ND	57.5	30-120	14.4	30
Benzo (k) fluoranthene	0.0216	0.00500	"	0.0333	ND	64.9	30-120	12.6	30
Chrysene	0.0217	0.00500	"	0.0333	ND	65.0	30-120	14.6	30
Dibenz (a,h) anthracene	0.0251	0.00500	"	0.0333	ND	75.3	30-120	17.2	30
Fluoranthene	0.0252	0.00500	"	0.0333	ND	75.5	30-120	21.8	30
Fluorene	0.0212	0.00500	"	0.0333	ND	63.6	30-120	15.4	30
Indeno (1,2,3-cd) pyrene	0.0288	0.00500	"	0.0333	ND	86.3	30-120	17.5	30
Pyrene	0.0222	0.00500	"	0.0333	ND	66.7	35-142	16.4	30
1-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.5	15-130	24.5	50
2-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.5	15-130	27.1	50
Surrogate: 2-Methylnaphthalene-d10	0.0190		"	0.0333		57.0	40-150		
Surrogate: Fluoranthene-d10	0.0242		"	0.0333		72.5	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0197 - EPA 3050B

Blank (BFE0197-BLK1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BFE0197-BS1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	34.3	0.200	mg/kg wet	40.0	85.7	80-120
Barium	33.4	0.400	"	40.0	83.5	80-120
Selenium	3.57	0.260	"	4.00	89.3	80-120

Duplicate (BFE0197-DUP1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg dry	ND		20
Barium	5.35	0.400	"	5.46	2.08	20
Selenium	0.290	0.260	"	0.312	7.10	20

Matrix Spike (BFE0197-MS1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	32.4	0.200	mg/kg dry	40.7	ND	79.7	75-125
Barium	39.1	0.400	"	40.7	5.46	82.7	75-125
Selenium	3.68	0.260	"	4.07	0.312	82.8	75-125

Matrix Spike Dup (BFE0197-MSD1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	32.6	0.200	mg/kg dry	40.7	ND	80.2	75-125	0.633	25
Barium	37.2	0.400	"	40.7	5.46	78.0	75-125	4.97	25
Selenium	3.38	0.260	"	4.07	0.312	75.5	75-125	8.39	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

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

Summit Scientific

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

Batch BFE0231 - General Preparation

Duplicate (BFE0231-DUP1)

Source: 2202315-01

Prepared & Analyzed: 05/11/22

% Solids	97.8	%	98.3	0.488	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

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

Summit Scientific

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

Batch BFE0561 - General Preparation

LCS (BFE0561-BS1)

Prepared & Analyzed: 05/25/22

pH	9.04	pH Units	9.18	98.5	95-105
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Duplicate (BFE0561-DUP1)

Source: 2202315-01

Prepared & Analyzed: 05/25/22

pH	7.13	pH Units	6.99	1.98	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:37

Notes and Definitions

I-02 This sample was analyzed outside of the recommended holding time.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 25, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2202327

Enclosed are the results of analyses for samples received by Summit Scientific on 02/25/22 16:13. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS05@6'	2202327-01	Soil	02/25/22 11:50	02/25/22 16:13
SS06@5'	2202327-02	Soil	02/25/22 14:00	02/25/22 16:13

Summit Scientific

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

Summit Scientific

202327

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020

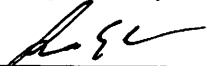
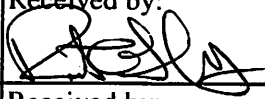
Phone: 303-487-1228

Project Name: Warning 3, 4-2 Tank Battery

Sampler Name: Geo Anderson

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAH's	Metals				
1	5505 e 6'	↑	1130	3			X			X				X	X	X		X					pH, EC, SAR by saturated paste
2	5506 e 5'	2/25/22	1400	3			X			X				X	X	X		X	X	+	+		
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Relinquished by: 	Date/Time: 2/25/22	Received by: Tasman's Lock Box	Date/Time: 2/25/22	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 2/25/22 1613	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 3.2 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

2202327

Sample Receipt Checklist

S2 Work Order#

Client: Boc/TasmanClient Project ID: Werning 34,2 Tank Battery

RCH 3,4-2

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

Matrix (check all that apply):

☐ Air☒ Soil/Solid☐ Water☐ Other:

(Describe)

Temp (°C)

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on ice
Were all samples received intact ⁽¹⁾ ?	-			
Was adequate sample volume provided ⁽¹⁾ ?	-			
If custody seals are present, are they intact ⁽¹⁾ ?	-			
Are samples with holding times due within 48 hours sample due within 48 hours present?	-			same day
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	-			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	-			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	-			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	-			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			-	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	

Additional Comments (if any):

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

Custodian Printed Name or Initials

Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

SS05@6'
2202327-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/25/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0313	02/25/22	02/26/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/25/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0382	95.4 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0392	98.1 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0374	93.4 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/25/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	60	50	mg/kg	1	BFB0314	02/25/22	02/27/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/25/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.4	107 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

SS05@6'
2202327-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/25/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0125	03/08/22	03/09/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/25/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0311	93.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0259	77.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/25/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	8.39	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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1775 Sherman St. STE. 3000
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Reported:
05/25/22 08:34

SS05@6'
2202327-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/25/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **02/25/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.95		pH Units	1	BFE0509	05/23/22	05/24/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

SS06@5'
2202327-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/25/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.011	0.0020	mg/kg	1	BFB0313	02/25/22	02/26/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.13	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.0	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.57	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.25	0.0050	"	"	"	"	"	"	
Naphthalene	0.036	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	14	0.50	"	"	"	"	"	"	

Date Sampled: **02/25/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0470	117 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.6 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0470	118 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/25/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	960	50	mg/kg	1	BFB0314	02/25/22	02/27/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/25/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.0	104 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

SS06@5'
2202327-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/25/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0317	02/28/22	03/01/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.00777	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0399	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.437	0.0500	"	10	"	"	"	"	
2-Methylnaphthalene	0.711	0.0500	"	"	"	"	"	"	

Date Sampled: **02/25/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0202	60.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0204	61.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/25/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.123	0.0100	mg/L	1	BFC0346	03/17/22	03/22/22	EPA 6020B	

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

Date Sampled: **02/25/22 14:00**

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
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Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

SS06@5'
2202327-02 (Soil)

Summit Scientific

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

Calcium	0.930	0.0520	mg/L dry	1	BFC0378	03/18/22	03/21/22	EPA 6020B
Magnesium	0.289	0.0520	"	"	"	"	"	"
Sodium	0.101	0.0520	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/25/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0235	0.00100	units	1	BFC0441	03/21/22	03/21/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/25/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.2		%	1	BFC0403	03/18/22	03/21/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/25/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.74	0.0100	mmhos/cm	1	BFC0409	03/18/22	03/18/22	EPA 120.1	

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

Date Sampled: **02/25/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.27		pH Units	1	BFC0410	03/18/22	03/18/22	EPA 9045D	
pH	2.75		"	"	BFE0509	05/23/22	05/24/22	"	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFB0313 - EPA 5030 Soil MS

Blank (BFB0313-BLK1)

Prepared: 02/25/22 Analyzed: 02/26/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0400		101	70-130			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2	70-130			

LCS (BFB0313-BS1)

Prepared: 02/25/22 Analyzed: 02/26/22

Benzene	0.0655	0.0020	mg/kg	0.0750		87.4	70-130			
Toluene	0.0678	0.0050	"	0.0750		90.4	70-130			
Ethylbenzene	0.0664	0.0050	"	0.0750		88.6	70-130			
m,p-Xylene	0.135	0.010	"	0.150		90.0	70-130			
o-Xylene	0.0713	0.0050	"	0.0750		95.0	70-130			
1,2,4-Trimethylbenzene	0.0733	0.0050	"	0.0750		97.7	70-130			
1,3,5-Trimethylbenzene	0.0701	0.0050	"	0.0750		93.5	70-130			
Naphthalene	0.0652	0.0038	"	0.0750		87.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0400		99.8	70-130			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.5	70-130			

Matrix Spike (BFB0313-MS1)

Source: 2202325-01

Prepared: 02/25/22 Analyzed: 02/26/22

Benzene	0.0630	0.0020	mg/kg	0.0750	ND	84.0	70-130			
Toluene	0.0657	0.0050	"	0.0750	ND	87.6	70-130			
Ethylbenzene	0.0616	0.0050	"	0.0750	ND	82.1	70-130			
m,p-Xylene	0.126	0.010	"	0.150	ND	84.2	70-130			
o-Xylene	0.0657	0.0050	"	0.0750	ND	87.6	70-130			
1,2,4-Trimethylbenzene	0.0669	0.0050	"	0.0750	ND	89.2	70-130			
1,3,5-Trimethylbenzene	0.0650	0.0050	"	0.0750	ND	86.6	70-130			
Naphthalene	0.0786	0.0038	"	0.0750	ND	105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0408		"	0.0400		102	70-130			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.1	70-130			

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Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFB0313 - EPA 5030 Soil MS

Matrix Spike Dup (BFB0313-MSD1)	Source: 2202325-01			Prepared: 02/25/22 Analyzed: 02/26/22						
Benzene	0.0662	0.0020	mg/kg	0.0750	ND	88.2	70-130	4.88	30	
Toluene	0.0683	0.0050	"	0.0750	ND	91.1	70-130	3.90	30	
Ethylbenzene	0.0681	0.0050	"	0.0750	ND	90.8	70-130	10.0	30	
m,p-Xylene	0.139	0.010	"	0.150	ND	92.6	70-130	9.57	30	
o-Xylene	0.0722	0.0050	"	0.0750	ND	96.3	70-130	9.40	30	
1,2,4-Trimethylbenzene	0.0740	0.0050	"	0.0750	ND	98.6	70-130	10.0	30	
1,3,5-Trimethylbenzene	0.0724	0.0050	"	0.0750	ND	96.5	70-130	10.8	30	
Naphthalene	0.0842	0.0038	"	0.0750	ND	112	70-130	6.85	30	
Surrogate: 1,2-Dichloroethane-d4	0.0409		"	0.0400		102	70-130			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.3	70-130			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFB0314 - EPA 3550A

Blank (BFB0314-BLK1)

Prepared: 02/25/22 Analyzed: 02/27/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFB0314-BS1)

Prepared: 02/25/22 Analyzed: 02/27/22

C10-C28 (DRO)	539	50	mg/kg	500	108	70-130
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Matrix Spike (BFB0314-MS1)

Source: 2202325-01

Prepared: 02/25/22 Analyzed: 02/27/22

C10-C28 (DRO)	500	50	mg/kg	500	38.1	92.3	70-130
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Matrix Spike Dup (BFB0314-MSD1)

Source: 2202325-01

Prepared: 02/25/22 Analyzed: 02/27/22

C10-C28 (DRO)	552	50	mg/kg	500	38.1	103	70-130	10.0	20
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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFB0317 - EPA 5030 Soil MS

Blank (BFB0317-BLK1)

Prepared & Analyzed: 02/28/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0213		"	0.0333		63.8	40-150			
Surrogate: Fluoranthene-d10	0.0240		"	0.0333		72.1	40-150			

LCS (BFB0317-BS1)

Prepared & Analyzed: 02/28/22

Acenaphthene	0.0222	0.00500	mg/kg	0.0333		66.7	31-137			
Anthracene	0.0218	0.00500	"	0.0333		65.5	30-120			
Benzo (a) anthracene	0.0207	0.00500	"	0.0333		62.2	30-120			
Benzo (a) pyrene	0.0224	0.00500	"	0.0333		67.3	30-120			
Benzo (b) fluoranthene	0.0209	0.00500	"	0.0333		62.8	30-120			
Benzo (k) fluoranthene	0.0244	0.00500	"	0.0333		73.2	30-120			
Chrysene	0.0230	0.00500	"	0.0333		69.0	30-120			
Dibenz (a,h) anthracene	0.0241	0.00500	"	0.0333		72.4	30-120			
Fluoranthene	0.0257	0.00500	"	0.0333		77.1	30-120			
Fluorene	0.0228	0.00500	"	0.0333		68.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0208	0.00500	"	0.0333		62.3	30-120			
Pyrene	0.0261	0.00500	"	0.0333		78.3	35-142			
1-Methylnaphthalene	0.0204	0.00500	"	0.0333		61.2	35-142			
2-Methylnaphthalene	0.0202	0.00500	"	0.0333		60.7	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0197		"	0.0333		59.2	40-150			
Surrogate: Fluoranthene-d10	0.0233		"	0.0333		69.8	40-150			

Summit Scientific

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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFB0317 - EPA 5030 Soil MS

Matrix Spike (BFB0317-MS1)

Source: 2202236-01

Prepared & Analyzed: 02/28/22

Acenaphthene	0.0217	0.00500	mg/kg	0.0333	ND	65.1	31-137		
Anthracene	0.0207	0.00500	"	0.0333	ND	62.1	30-120		
Benzo (a) anthracene	0.0190	0.00500	"	0.0333	ND	57.1	30-120		
Benzo (a) pyrene	0.0237	0.00500	"	0.0333	ND	71.2	30-120		
Benzo (b) fluoranthene	0.0236	0.00500	"	0.0333	ND	70.9	30-120		
Benzo (k) fluoranthene	0.0278	0.00500	"	0.0333	ND	83.4	30-120		
Chrysene	0.0210	0.00500	"	0.0333	ND	63.0	30-120		
Dibenz (a,h) anthracene	0.0334	0.00500	"	0.0333	ND	100	30-120		
Fluoranthene	0.0276	0.00500	"	0.0333	ND	82.8	30-120		
Fluorene	0.0235	0.00500	"	0.0333	ND	70.6	30-120		
Indeno (1,2,3-cd) pyrene	0.0243	0.00500	"	0.0333	ND	73.0	30-120		
Pyrene	0.0235	0.00500	"	0.0333	ND	70.5	35-142		
1-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.3	15-130		
2-Methylnaphthalene	0.0195	0.00500	"	0.0333	ND	58.6	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0190		"	0.0333		57.1	40-150		
Surrogate: Fluoranthene-d10	0.0270		"	0.0333		81.1	40-150		

Matrix Spike Dup (BFB0317-MSD1)

Source: 2202236-01

Prepared & Analyzed: 02/28/22

Acenaphthene	0.0259	0.00500	mg/kg	0.0333	ND	77.6	31-137	17.6	30
Anthracene	0.0235	0.00500	"	0.0333	ND	70.5	30-120	12.7	30
Benzo (a) anthracene	0.0232	0.00500	"	0.0333	ND	69.5	30-120	19.6	30
Benzo (a) pyrene	0.0253	0.00500	"	0.0333	ND	75.9	30-120	6.34	30
Benzo (b) fluoranthene	0.0254	0.00500	"	0.0333	ND	76.1	30-120	7.04	30
Benzo (k) fluoranthene	0.0308	0.00500	"	0.0333	ND	92.3	30-120	10.2	30
Chrysene	0.0248	0.00500	"	0.0333	ND	74.5	30-120	16.9	30
Dibenz (a,h) anthracene	0.0257	0.00500	"	0.0333	ND	77.0	30-120	26.1	30
Fluoranthene	0.0266	0.00500	"	0.0333	ND	79.8	30-120	3.79	30
Fluorene	0.0283	0.00500	"	0.0333	ND	84.9	30-120	18.4	30
Indeno (1,2,3-cd) pyrene	0.0259	0.00500	"	0.0333	ND	77.6	30-120	6.14	30
Pyrene	0.0274	0.00500	"	0.0333	ND	82.3	35-142	15.4	30
1-Methylnaphthalene	0.0241	0.00500	"	0.0333	ND	72.4	15-130	19.9	50
2-Methylnaphthalene	0.0241	0.00500	"	0.0333	ND	72.4	15-130	21.1	50
Surrogate: 2-Methylnaphthalene-d10	0.0229		"	0.0333		68.8	40-150		
Surrogate: Fluoranthene-d10	0.0267		"	0.0333		80.2	40-150		

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0125 - EPA 5030 Soil MS

Blank (BFC0125-BLK1)

Prepared: 03/08/22 Analyzed: 03/09/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0364		"	0.0333		109	40-150			
Surrogate: Fluoranthene-d10	0.0317		"	0.0333		95.2	40-150			

LCS (BFC0125-BS1)

Prepared: 03/08/22 Analyzed: 03/09/22

Acenaphthene	0.0282	0.00500	mg/kg	0.0333		84.7	31-137			
Anthracene	0.0286	0.00500	"	0.0333		85.8	30-120			
Benzo (a) anthracene	0.0277	0.00500	"	0.0333		83.1	30-120			
Benzo (a) pyrene	0.0266	0.00500	"	0.0333		79.8	30-120			
Benzo (b) fluoranthene	0.0271	0.00500	"	0.0333		81.3	30-120			
Benzo (k) fluoranthene	0.0285	0.00500	"	0.0333		85.5	30-120			
Chrysene	0.0289	0.00500	"	0.0333		86.7	30-120			
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333		66.3	30-120			
Fluoranthene	0.0281	0.00500	"	0.0333		84.4	30-120			
Fluorene	0.0284	0.00500	"	0.0333		85.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333		46.1	30-120			
Pyrene	0.0285	0.00500	"	0.0333		85.5	35-142			
1-Methylnaphthalene	0.0364	0.00500	"	0.0333		109	35-142			
2-Methylnaphthalene	0.0365	0.00500	"	0.0333		110	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0376		"	0.0333		113	40-150			
Surrogate: Fluoranthene-d10	0.0319		"	0.0333		95.6	40-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0125 - EPA 5030 Soil MS

Matrix Spike (BFC0125-MS1)

Source: 220327-01

Prepared: 03/08/22 Analyzed: 03/09/22

Acenaphthene	0.0181	0.00500	mg/kg	0.0333	ND	54.2	31-137			
Anthracene	0.0183	0.00500	"	0.0333	ND	54.8	30-120			
Benzo (a) anthracene	0.0211	0.00500	"	0.0333	ND	63.4	30-120			
Benzo (a) pyrene	0.0192	0.00500	"	0.0333	ND	57.6	30-120			
Benzo (b) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.5	30-120			
Benzo (k) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.6	30-120			
Chrysene	0.0211	0.00500	"	0.0333	ND	63.2	30-120			
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333	ND	46.0	30-120			
Fluoranthene	0.0203	0.00500	"	0.0333	ND	60.8	30-120			
Fluorene	0.0185	0.00500	"	0.0333	ND	55.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0111	0.00500	"	0.0333	ND	33.3	30-120			
Pyrene	0.0207	0.00500	"	0.0333	ND	62.1	35-142			
1-Methylnaphthalene	0.0274	0.00500	"	0.0333	ND	82.1	15-130			
2-Methylnaphthalene	0.0272	0.00500	"	0.0333	ND	81.7	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0274		"	0.0333		82.3	40-150			
Surrogate: Fluoranthene-d10	0.0233		"	0.0333		70.0	40-150			

Matrix Spike Dup (BFC0125-MSD1)

Source: 220327-01

Prepared: 03/08/22 Analyzed: 03/09/22

Acenaphthene	0.0217	0.00500	mg/kg	0.0333	ND	65.1	31-137	18.2	30
Anthracene	0.0228	0.00500	"	0.0333	ND	68.4	30-120	22.2	30
Benzo (a) anthracene	0.0247	0.00500	"	0.0333	ND	74.0	30-120	15.5	30
Benzo (a) pyrene	0.0228	0.00500	"	0.0333	ND	68.4	30-120	17.0	30
Benzo (b) fluoranthene	0.0242	0.00500	"	0.0333	ND	72.6	30-120	18.2	30
Benzo (k) fluoranthene	0.0242	0.00500	"	0.0333	ND	72.7	30-120	18.3	30
Chrysene	0.0242	0.00500	"	0.0333	ND	72.7	30-120	13.9	30
Dibenz (a,h) anthracene	0.0205	0.00500	"	0.0333	ND	61.4	30-120	28.7	30
Fluoranthene	0.0243	0.00500	"	0.0333	ND	72.8	30-120	17.8	30
Fluorene	0.0217	0.00500	"	0.0333	ND	65.1	30-120	15.8	30
Indeno (1,2,3-cd) pyrene	0.0137	0.00500	"	0.0333	ND	41.1	30-120	20.9	30
Pyrene	0.0248	0.00500	"	0.0333	ND	74.5	35-142	18.1	30
1-Methylnaphthalene	0.0284	0.00500	"	0.0333	ND	85.3	15-130	3.81	50
2-Methylnaphthalene	0.0314	0.00500	"	0.0333	ND	94.1	15-130	14.1	50
Surrogate: 2-Methylnaphthalene-d10	0.0299		"	0.0333		89.8	40-150		
Surrogate: Fluoranthene-d10	0.0275		"	0.0333		82.4	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

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

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

Batch BFC0346 - EPA 3050B

Blank (BFC0346-BLK1)

Prepared: 03/17/22 Analyzed: 03/18/22

Boron ND 0.0100 mg/L

LCS (BFC0346-BS1)

Prepared: 03/17/22 Analyzed: 03/18/22

Boron 4.66 0.0100 mg/L 5.00 93.3 80-120

Duplicate (BFC0346-DUP1)

Source: 2202169-03

Prepared: 03/17/22 Analyzed: 03/18/22

Boron 0.0592 0.0100 mg/L 0.0609 2.95 20

Matrix Spike (BFC0346-MS1)

Source: 2202169-03

Prepared: 03/17/22 Analyzed: 03/18/22

Boron 4.77 0.0100 mg/L 5.00 0.0609 94.1 75-125

Matrix Spike Dup (BFC0346-MSD1)

Source: 2202169-03

Prepared: 03/17/22 Analyzed: 03/18/22

Boron 4.72 0.0100 mg/L 5.00 0.0609 93.2 75-125 0.951 25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0197 - EPA 3050B

Blank (BFE0197-BLK1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BFE0197-BS1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	34.3	0.200	mg/kg wet	40.0		85.7	80-120			
Barium	33.4	0.400	"	40.0		83.5	80-120			
Selenium	3.57	0.260	"	4.00		89.3	80-120			

Duplicate (BFE0197-DUP1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg dry		ND				20	
Barium	5.35	0.400	"		5.46			2.08	20	
Selenium	0.290	0.260	"		0.312			7.10	20	

Matrix Spike (BFE0197-MS1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	32.4	0.200	mg/kg dry	40.7	ND	79.7	75-125			
Barium	39.1	0.400	"	40.7	5.46	82.7	75-125			
Selenium	3.68	0.260	"	4.07	0.312	82.8	75-125			

Matrix Spike Dup (BFE0197-MSD1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	32.6	0.200	mg/kg dry	40.7	ND	80.2	75-125	0.633	25	
Barium	37.2	0.400	"	40.7	5.46	78.0	75-125	4.97	25	
Selenium	3.38	0.260	"	4.07	0.312	75.5	75-125	8.39	25	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

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

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

Batch BFC0378 - General Preparation

Blank (BFC0378-BLK1)

Prepared: 03/18/22 Analyzed: 03/21/22

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

LCS (BFC0378-BS1)

Prepared: 03/18/22 Analyzed: 03/21/22

Calcium	5.85	0.0500	mg/L wet	5.00	117	70-130
Magnesium	6.14	0.0500	"	5.00	123	70-130
Sodium	5.10	0.0500	"	5.00	102	70-130

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

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

Summit Scientific

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

Batch BFC0403 - General Preparation

Duplicate (BFC0403-DUP1)		Source: 2202327-02			Prepared: 03/18/22 Analyzed: 03/21/22					
% Solids	95.5		%		96.2			0.705	20	

Batch BFE0231 - General Preparation

Duplicate (BFE0231-DUP1)		Source: 2202315-01			Prepared & Analyzed: 05/11/22					
% Solids	97.8		%		98.3			0.488	20	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BFC0409 - General Preparation

Blank (BFC0409-BLK1)

Prepared & Analyzed: 03/18/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFC0409-BS1)

Prepared & Analyzed: 03/18/22

Specific Conductance (EC) 0.150 0.0100 mmhos/cm 0.150 100 95-105

Duplicate (BFC0409-DUP1)

Source: 2202121-01

Prepared & Analyzed: 03/18/22

Specific Conductance (EC) 5.55 0.0100 mmhos/cm 5.54 0.0901 20

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

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

Summit Scientific

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

Batch BFC0410 - General Preparation

LCS (BFC0410-BS1)

Prepared & Analyzed: 03/18/22

pH	9.11		pH Units	9.18		99.2	95-105
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Duplicate (BFC0410-DUP1)

Source: 2202121-01

Prepared & Analyzed: 03/18/22

pH	8.20		pH Units		8.20		0.00	20
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Batch BFE0509 - General Preparation

LCS (BFE0509-BS1)

Prepared: 05/23/22 Analyzed: 05/24/22

pH	9.06		pH Units	9.18		98.7	95-105
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Duplicate (BFE0509-DUP1)

Source: 2202327-01

Prepared: 05/23/22 Analyzed: 05/24/22

pH	7.85		pH Units		7.95		1.27	20
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Summit Scientific

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



Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Summit Scientific
Paul Shrewsbury
4653 Table Mountain Dr
Golden, CO 80403

RE: 2202327
Work Order Number: 2203088

March 19, 2022

Attention Paul Shrewsbury:

Fremont Analytical, Inc. received 1 sample(s) on 3/1/2022 for the analyses presented in the following report.

Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Muri Premer

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

www.fremontanalytical.com



Date: 03/19/2022

CLIENT: Summit Scientific
Project: 2202327
Work Order: 2203088

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2203088-001	SS06@5'	02/25/2022 2:00 PM	03/01/2022 3:13 PM
2203088-001	SS06@5'	02/25/2022 2:00 PM	03/01/2022 3:13 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

CLIENT: Summit Scientific**Project:** 2202327

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Metals by EPA Method 6020 data is presented in this report. Boron by the Hot Water Soluble prep as well as the remaining analyses have been placed on hold and will be analyzed by Summit Scientific.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2203088

Date Reported: 3/19/2022

Client: Summit Scientific

Collection Date: 2/25/2022 2:00:00 PM

Project: 2202327

Lab ID: 2203088-001

Matrix: Soil

Client Sample ID: SS06 @5'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35681

Analyst: EH

Arsenic	1.10	0.349	D	mg/Kg-dry	5	3/11/2022 3:35:00 PM
Barium	12.1	1.75	D	mg/Kg-dry	5	3/11/2022 3:35:00 PM
Cadmium	ND	0.582	D	mg/Kg-dry	5	3/11/2022 3:35:00 PM
Copper	ND	2.91	D	mg/Kg-dry	5	3/11/2022 3:35:00 PM
Lead	1.69	0.582	D	mg/Kg-dry	5	3/11/2022 3:35:00 PM
Nickel	ND	1.45	D	mg/Kg-dry	5	3/11/2022 3:35:00 PM
Selenium	ND	0.582	D	mg/Kg-dry	5	3/11/2022 3:35:00 PM
Silver	ND	0.436	D	mg/Kg-dry	5	3/11/2022 3:35:00 PM
Zinc	8.04	5.09	D	mg/Kg-dry	5	3/11/2022 3:35:00 PM

NOTES:

Diluted due to matrix.

Sample Moisture (Percent Moisture)

Batch ID: R73982

Analyst: ALB

Percent Moisture	8.11	0.500		wt%	1	3/15/2022 12:00:33 PM
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Date: 3/19/2022

Work Order: 2203088
CLIENT: Summit Scientific
Project: 2202327

QC SUMMARY REPORT
Total Metals by EPA Method 6020B

Sample ID: MB-35681		SampType: MBLK		Units: mg/Kg		Prep Date: 3/11/2022			RunNo: 73920		
Client ID: MBLKS		Batch ID: 35681					Analysis Date: 3/11/2022			SeqNo: 1514370	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	0.0960
Barium	ND	0.480
Cadmium	ND	0.160
Copper	ND	0.800
Lead	ND	0.160
Nickel	ND	0.400
Selenium	ND	0.160
Silver	ND	0.120
Zinc	ND	1.40

Sample ID: LCS-35681		SampType: LCS			Units: mg/Kg		Prep Date: 3/11/2022			RunNo: 73920		
Client ID: LCSS		Batch ID: 35681			Analysis Date: 3/11/2022			SeqNo: 1514371				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Arsenic	38.5	0.0960	40.00	0	96.2	80	120
Barium	42.5	0.480	40.00	0	106	80	120
Cadmium	2.07	0.160	2.000	0	103	80	120
Copper	39.1	0.800	40.00	0	97.7	80	120
Lead	19.7	0.160	20.00	0	98.5	80	120
Nickel	39.2	0.400	40.00	0	98.1	80	120
Selenium	3.86	0.160	4.000	0	96.4	80	120
Silver	1.96	0.120	2.000	0	97.9	80	120
Zinc	38.8	1.40	40.00	0	96.9	80	120

Sample ID: 2203218-002AMS		SampType: MS			Units: mg/Kg-dry		Prep Date: 3/11/2022			RunNo: 73920		
Client ID: BATCH		Batch ID: 35681			Analysis Date: 3/11/2022					SeqNo: 1514374		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Arsenic	45.3	0.103	42.84	2.348	100	75	125
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Work Order: 2203088
CLIENT: Summit Scientific
Project: 2202327

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: 2203218-002AMS		SampType: MS		Units: mg/Kg-dry		Prep Date: 3/11/2022			RunNo: 73920		
Client ID: BATCH		Batch ID: 35681					Analysis Date: 3/11/2022			SeqNo: 1514374	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	100	0.514	42.84	59.38	95.2	75	125				
Cadmium	2.21	0.171	2.142	0.06220	100	75	125				
Copper	53.4	0.857	42.84	13.14	94.0	75	125				
Lead	21.3	0.171	21.42	1.862	90.8	75	125				
Nickel	81.7	0.428	42.84	43.97	88.0	75	125				
Selenium	4.86	0.171	4.284	0.5611	100	75	125				
Silver	1.94	0.129	2.142	0	90.7	75	125				
Zinc	73.4	1.50	42.84	31.49	97.8	75	125				

Sample ID: 2203218-002AMSD		SampType: MSD		Units: mg/Kg-dry		Prep Date: 3/11/2022			RunNo: 73920		
Client ID: BATCH		Batch ID: 35681		Analysis Date: 3/11/2022					SeqNo: 1514375		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.1	0.103	42.84	2.348	104	75	125	45.34	3.70	20	
Barium	101	0.514	42.84	59.38	96.4	75	125	100.2	0.489	20	
Cadmium	2.32	0.171	2.142	0.06220	105	75	125	2.214	4.63	20	
Copper	55.5	0.857	42.84	13.14	98.8	75	125	53.40	3.77	20	
Lead	21.8	0.171	21.42	1.862	93.0	75	125	21.31	2.18	20	
Nickel	85.4	0.428	42.84	43.97	96.7	75	125	81.65	4.48	20	
Selenium	5.05	0.171	4.284	0.5611	105	75	125	4.864	3.85	20	
Silver	2.02	0.129	2.142	0	94.1	75	125	1.942	3.67	20	
Zinc	74.4	1.50	42.84	31.49	100	75	125	73.39	1.31	20	

Client Name: **SUMSCI**

Work Order Number: **2203088**

Logged by: **Gabrielle Coeuille**

Date Received: **3/1/2022 3:13:00 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒
6. Was an attempt made to cool the samples? Yes ☐ No ☒ NA ☐
7. Were all items received at a temperature of >2°C to 6°C * Yes ☐ No ☐ NA ☒
- No cooler present**
8. Sample(s) in proper container(s)? Yes ☒ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
10. Are samples properly preserved? Yes ☒ No ☐
11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☒
13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
14. Does paperwork match bottle labels? Yes ☒ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
16. Is it clear what analyses were requested? Yes ☒ No ☐
17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample 1	17.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/25/22 08:34

Notes and Definitions

I-02 This sample was analyzed outside of the recommended holding time.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 26, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2202359

Enclosed are the results of analyses for samples received by Summit Scientific on 02/28/22 16:46. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS07@8'	2202359-01	Soil	02/28/22 14:10	02/28/22 16:46
SS08@8'	2202359-02	Soil	02/28/22 14:15	02/28/22 16:46

Summit Scientific

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

Summit Scientific

S₂

2202359

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page | of |

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020

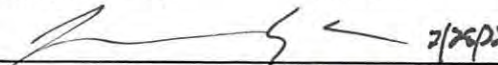

Phone: 303-487-1228

Project Name: Warning 3, 4-2 Tank Battery

Sampler Name: Sam Anderson

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR		
1	SS07E 8'	2/28/22	1410	3			X			X			X	X	X				pH, EC, SAR by saturated paste
2	SS09C 8'	↓	1415	3			X			X			X	X	X				
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: 	Date/Time: 2/28/22	Received by: Tasman's Lock Box	Date/Time: 2/28/22	Turn Around Time (Check)	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 2/28/22 1646	Received by: 	Date/Time: 2/28/22 1646	Same Day <input checked="" type="checkbox"/> 72 hours —	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours — Standard —	
				48 hours —	
				Sample Integrity:	
				Temperature Upon Receipt: 33	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

Sample Receipt Checklist

S2 Work Order#


2202359

Client: Poc/TasmanClient Project ID: Warning 3,4-2 Tank BatteryShipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other ☐ Air ☐ Soil/Solid ☐ Water ☐ Other: _____Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)Temp (°C) 33

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sameday
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

 Custodian Printed Name or Initials

2.28.22
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

SS07@8'
2202359-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0338	02/28/22	03/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/28/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0404	101 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0416	104 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0339	02/28/22	02/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.4	91.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

SS07@8'
2202359-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/28/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0125	03/08/22	03/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0280	84.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0251	75.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/28/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	4.60	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.4		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **02/28/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.72		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

SS07@8'
2202359-01 (Soil)

Summit Scientific

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

Summit Scientific

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

A handwritten signature in black ink, appearing to be 'MSM'.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

SS08@8'
2202359-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/22 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFB0338	02/28/22	03/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/28/22 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0364	91.1 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.5 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/22 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0339	02/28/22	03/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.5	92.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

SS08@8'
2202359-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/28/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0125	03/08/22	03/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0271	81.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0233	69.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/28/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.795	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	7.67	0.400	"	"	"	"	"	"	
Selenium	0.297	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.4		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **02/28/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.69		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

SS08@8'
2202359-02 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFB0338 - EPA 5030 Soil MS

Blank (BFB0338-BLK1)

Prepared: 02/28/22 Analyzed: 03/01/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0400		98.2	70-130			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	70-130			

LCS (BFB0338-BS1)

Prepared: 02/28/22 Analyzed: 03/01/22

Benzene	0.120	0.0020	mg/kg	0.100		120	70-130			
Toluene	0.115	0.0050	"	0.100		115	70-130			
Ethylbenzene	0.107	0.0050	"	0.100		107	70-130			
m,p-Xylene	0.208	0.010	"	0.200		104	70-130			
o-Xylene	0.102	0.0050	"	0.100		102	70-130			
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130			
1,3,5-Trimethylbenzene	0.0965	0.0050	"	0.100		96.5	70-130			
Naphthalene	0.0784	0.0038	"	0.100		78.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0411		"	0.0400		103	70-130			
Surrogate: Toluene-d8	0.0422		"	0.0400		105	70-130			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	70-130			

Matrix Spike (BFB0338-MS1)

Source: 2202356-01

Prepared: 02/28/22 Analyzed: 03/01/22

Benzene	0.113	0.0020	mg/kg	0.100	ND	113	70-130			
Toluene	0.109	0.0050	"	0.100	ND	109	70-130			
Ethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
m,p-Xylene	0.210	0.010	"	0.200	ND	105	70-130			
o-Xylene	0.0997	0.0050	"	0.100	ND	99.7	70-130			
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130			
1,3,5-Trimethylbenzene	0.0973	0.0050	"	0.100	ND	97.3	70-130			
Naphthalene	0.0727	0.0038	"	0.100	ND	72.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0395		"	0.0400		98.7	70-130			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.6	70-130			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFB0338 - EPA 5030 Soil MS

Matrix Spike Dup (BFB0338-MSD1)	Source: 2202356-01			Prepared: 02/28/22 Analyzed: 03/01/22						
Benzene	0.106	0.0020	mg/kg	0.100	ND	106	70-130	5.62	30	
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	5.04	30	
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	7.35	30	
m,p-Xylene	0.195	0.010	"	0.200	ND	97.3	70-130	7.41	30	
o-Xylene	0.0932	0.0050	"	0.100	ND	93.2	70-130	6.78	30	
1,2,4-Trimethylbenzene	0.0927	0.0050	"	0.100	ND	92.7	70-130	7.89	30	
1,3,5-Trimethylbenzene	0.0903	0.0050	"	0.100	ND	90.3	70-130	7.42	30	
Naphthalene	0.0703	0.0038	"	0.100	ND	70.3	70-130	3.32	30	
Surrogate: 1,2-Dichloroethane-d4	0.0380		"	0.0400		95.0	70-130			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.5	70-130			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFB0339 - EPA 3550A

Blank (BFB0339-BLK1)

Prepared: 02/28/22 Analyzed: 03/02/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFB0339-BS1)

Prepared: 02/28/22 Analyzed: 03/02/22

C10-C28 (DRO)	500	50	mg/kg	500	100	70-130
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Matrix Spike (BFB0339-MS1)

Source: 2202356-01

Prepared: 02/28/22 Analyzed: 03/02/22

C10-C28 (DRO)	429	50	mg/kg	500	ND	85.9	70-130
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Matrix Spike Dup (BFB0339-MSD1)

Source: 2202356-01

Prepared: 02/28/22 Analyzed: 03/02/22

C10-C28 (DRO)	421	50	mg/kg	500	ND	84.2	70-130	1.91	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0125 - EPA 5030 Soil MS

Blank (BFC0125-BLK1)

Prepared: 03/08/22 Analyzed: 03/09/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0364		"	0.0333		109	40-150			
Surrogate: Fluoranthene-d10	0.0317		"	0.0333		95.2	40-150			

LCS (BFC0125-BS1)

Prepared: 03/08/22 Analyzed: 03/09/22

Acenaphthene	0.0282	0.00500	mg/kg	0.0333		84.7	31-137			
Anthracene	0.0286	0.00500	"	0.0333		85.8	30-120			
Benzo (a) anthracene	0.0277	0.00500	"	0.0333		83.1	30-120			
Benzo (a) pyrene	0.0266	0.00500	"	0.0333		79.8	30-120			
Benzo (b) fluoranthene	0.0271	0.00500	"	0.0333		81.3	30-120			
Benzo (k) fluoranthene	0.0285	0.00500	"	0.0333		85.5	30-120			
Chrysene	0.0289	0.00500	"	0.0333		86.7	30-120			
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333		66.3	30-120			
Fluoranthene	0.0281	0.00500	"	0.0333		84.4	30-120			
Fluorene	0.0284	0.00500	"	0.0333		85.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333		46.1	30-120			
Pyrene	0.0285	0.00500	"	0.0333		85.5	35-142			
1-Methylnaphthalene	0.0364	0.00500	"	0.0333		109	35-142			
2-Methylnaphthalene	0.0365	0.00500	"	0.0333		110	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0376		"	0.0333		113	40-150			
Surrogate: Fluoranthene-d10	0.0319		"	0.0333		95.6	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0125 - EPA 5030 Soil MS

Matrix Spike (BFC0125-MS1)

Source: 220327-01

Prepared: 03/08/22 Analyzed: 03/09/22

Acenaphthene	0.0181	0.00500	mg/kg	0.0333	ND	54.2	31-137				
Anthracene	0.0183	0.00500	"	0.0333	ND	54.8	30-120				
Benzo (a) anthracene	0.0211	0.00500	"	0.0333	ND	63.4	30-120				
Benzo (a) pyrene	0.0192	0.00500	"	0.0333	ND	57.6	30-120				
Benzo (b) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.5	30-120				
Benzo (k) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.6	30-120				
Chrysene	0.0211	0.00500	"	0.0333	ND	63.2	30-120				
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333	ND	46.0	30-120				
Fluoranthene	0.0203	0.00500	"	0.0333	ND	60.8	30-120				
Fluorene	0.0185	0.00500	"	0.0333	ND	55.6	30-120				
Indeno (1,2,3-cd) pyrene	0.0111	0.00500	"	0.0333	ND	33.3	30-120				
Pyrene	0.0207	0.00500	"	0.0333	ND	62.1	35-142				
1-Methylnaphthalene	0.0274	0.00500	"	0.0333	ND	82.1	15-130				
2-Methylnaphthalene	0.0272	0.00500	"	0.0333	ND	81.7	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0274		"	0.0333		82.3	40-150				
Surrogate: Fluoranthene-d10	0.0233		"	0.0333		70.0	40-150				

Matrix Spike Dup (BFC0125-MSD1)

Source: 220327-01

Prepared: 03/08/22 Analyzed: 03/09/22

Acenaphthene	0.0217	0.00500	mg/kg	0.0333	ND	65.1	31-137	18.2	30		
Anthracene	0.0228	0.00500	"	0.0333	ND	68.4	30-120	22.2	30		
Benzo (a) anthracene	0.0247	0.00500	"	0.0333	ND	74.0	30-120	15.5	30		
Benzo (a) pyrene	0.0228	0.00500	"	0.0333	ND	68.4	30-120	17.0	30		
Benzo (b) fluoranthene	0.0242	0.00500	"	0.0333	ND	72.6	30-120	18.2	30		
Benzo (k) fluoranthene	0.0242	0.00500	"	0.0333	ND	72.7	30-120	18.3	30		
Chrysene	0.0242	0.00500	"	0.0333	ND	72.7	30-120	13.9	30		
Dibenz (a,h) anthracene	0.0205	0.00500	"	0.0333	ND	61.4	30-120	28.7	30		
Fluoranthene	0.0243	0.00500	"	0.0333	ND	72.8	30-120	17.8	30		
Fluorene	0.0217	0.00500	"	0.0333	ND	65.1	30-120	15.8	30		
Indeno (1,2,3-cd) pyrene	0.0137	0.00500	"	0.0333	ND	41.1	30-120	20.9	30		
Pyrene	0.0248	0.00500	"	0.0333	ND	74.5	35-142	18.1	30		
1-Methylnaphthalene	0.0284	0.00500	"	0.0333	ND	85.3	15-130	3.81	50		
2-Methylnaphthalene	0.0314	0.00500	"	0.0333	ND	94.1	15-130	14.1	50		
Surrogate: 2-Methylnaphthalene-d10	0.0299		"	0.0333		89.8	40-150				
Surrogate: Fluoranthene-d10	0.0275		"	0.0333		82.4	40-150				

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0197 - EPA 3050B

Blank (BFE0197-BLK1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BFE0197-BS1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	34.3	0.200	mg/kg wet	40.0	85.7	80-120
Barium	33.4	0.400	"	40.0	83.5	80-120
Selenium	3.57	0.260	"	4.00	89.3	80-120

Duplicate (BFE0197-DUP1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg dry	ND		20
Barium	5.35	0.400	"	5.46	2.08	20
Selenium	0.290	0.260	"	0.312	7.10	20

Matrix Spike (BFE0197-MS1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	32.4	0.200	mg/kg dry	40.7	ND	79.7	75-125
Barium	39.1	0.400	"	40.7	5.46	82.7	75-125
Selenium	3.68	0.260	"	4.07	0.312	82.8	75-125

Matrix Spike Dup (BFE0197-MSD1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	32.6	0.200	mg/kg dry	40.7	ND	80.2	75-125	0.633	25
Barium	37.2	0.400	"	40.7	5.46	78.0	75-125	4.97	25
Selenium	3.38	0.260	"	4.07	0.312	75.5	75-125	8.39	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

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

Summit Scientific

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

Batch BFE0231 - General Preparation

Duplicate (BFE0231-DUP1)

Source: 2202315-01

Prepared & Analyzed: 05/11/22

% Solids	97.8	%		98.3		0.488	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

05/26/22 10:39

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

Summit Scientific

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

Batch BFE0561 - General Preparation

LCS (BFE0561-BS1)

Prepared & Analyzed: 05/25/22

pH	9.04	pH Units	9.18	98.5	95-105
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Duplicate (BFE0561-DUP1)

Source: 2202315-01

Prepared & Analyzed: 05/25/22

pH	7.13	pH Units	6.99	1.98	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:39

Notes and Definitions

I-02 This sample was analyzed outside of the recommended holding time.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 26, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2203001

Enclosed are the results of analyses for samples received by Summit Scientific on 03/01/22 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, flowing script.

Paul Shrewsbury For Muri Premer
Project Manager



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS09@2'	2203001-01	Soil	03/01/22 10:40	03/01/22 16:00
SS10@5'	2203001-02	Soil	03/01/22 10:52	03/01/22 16:00
SS11@8'	2203001-03	Soil	03/01/22 10:30	03/01/22 16:00
SS12@2'	2203001-04	Soil	03/01/22 12:00	03/01/22 16:00
SS13@5'	2203001-05	Soil	03/01/22 12:10	03/01/22 16:00
SS14@2'	2203001-06	Soil	03/01/22 13:45	03/01/22 16:00
SS15@5'	2203001-07	Soil	03/01/22 14:00	03/01/22 16:00
SS16@8'	2203001-08	Soil	03/01/22 14:35	03/01/22 16:00
BKG02@2'	2203001-09	Soil	03/01/22 09:30	03/01/22 16:00
BKG02@5'	2203001-10	Soil	03/01/22 09:40	03/01/22 16:00
BKG02@8'	2203001-11	Soil	03/01/22 10:00	03/01/22 16:00
BKG03@2'	2203001-12	Soil	03/01/22 12:35	03/01/22 16:00
BKG03@5'	2203001-13	Soil	03/01/22 12:49	03/01/22 16:00
BKG03@8'	2203001-14	Soil	03/01/22 13:00	03/01/22 16:00

Sample ID SS16@5' changed to SS16@8' per request of SA 03/.2/22 - MP03/02/22

Summit Scientific

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

Summit Scientific

S₂

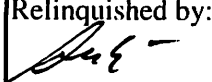

2203001.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 2

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Warning 3,4-2 Tank Battery
Sampler Name: Sam Fisher Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR		
1	SS09 e 2'	3/1/22	1040	3			X			X			X	X	X				pH, EC, SAR by saturated paste
2	SS10 e 5'		1052	3			X			X			X	X	X				
3	SS11 e 8'		1030	3			X			X			X	X	X				
4	SS12 e 2'		1200	3			X			X			X	X	X				
5	SS13 e 5'		1210	3			X			X			X	X	X				
6	SS14 e 2'		1345	3			X			X			X	X	X				
7	SS15 e 5'	↓	1400	3			X			X			X	X	X				
8	SS16 e 2'		1435	3			X			X			X	X	X				
9																			
10																			

Relinquished by: 	Date/Time: 3/1/22 1600	Received by: Tasman's Lock Box	Date/Time: 3/1/22 1600	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 3/22 1600	Received by: 	Date/Time: 3/22 1600	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 6.3 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Summit Scientific

S₂

2203001.2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 2 of 2

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Warning 3, 4-2 Tank Battery
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	Metals		
1	BK602 e 2'	930	3/1/22	1			X			X								X	pH, EC, SAR by saturated paste	
2	BK602 e 5'	940	↓	1			X			X							X			
3	BK602 e 8'	1000		1			X			X							X			
4	BK603 e 2'	1235		1			X			X							X			
5	BK603 e 5'	1249		1			X			X							X			
6	BK603 e 8'	1300		1			X			X							X			
7																				
8																				
9																				
10																				

Relinquished by: <u>[Signature]</u>	Date/Time: <u>3/1/22 1600</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>3/1/22 1600</u>	Turn Around Time (Check) Same Day <u>X</u> 72 hours <u>—</u> 24 hours <u>—</u> Standard <u>—</u> 48 hours <u>—</u>	Notes:
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time: <u>3/22 1600</u>	Received by: <u>[Signature]</u>	Date/Time: <u>3/22 1600</u>	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: <u>6.3</u> Samples Intact: <u>(Yes)</u> No	

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2203001Client: Poc/TasmanClient Project ID: Warning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

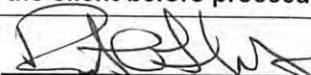
Temp (°C)

6.3

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sameday
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

 Custodian Printed Name or Initials

3.1.22
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS09@2'
2203001-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0025	03/01/22	03/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0390	97.6 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0391	97.6 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0369	92.3 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0026	03/01/22	03/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.50	68.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS09@2'
2203001-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0166	49.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0148	44.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/01/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.35	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	17.6	0.400	"	"	"	"	"	"	
Selenium	0.274	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.2		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/01/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.40		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS09@2'
2203001-01 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS10@5'
2203001-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/22 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0025	03/01/22	03/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/22 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0401	100 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0384	95.9 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0369	92.2 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/22 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0026	03/01/22	03/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/22 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.9	87.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS10@5'
2203001-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/22 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/22 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0198	59.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0200	59.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/01/22 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.608	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	41.6	0.400	"	"	"	"	"	"	
Selenium	0.468	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.9		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/01/22 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.84		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS10@5'
2203001-02 (Soil)

Summit Scientific

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS11@8'
2203001-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0025	03/01/22	03/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0378	94.5 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0366	91.4 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0026	03/01/22	03/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.51	76.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS11@8'
2203001-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0316	94.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0297	89.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.453	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	35.3	0.400	"	"	"	"	"	"	
Selenium	0.737	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.9		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.25		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS11@8'
2203001-03 (Soil)

Summit Scientific

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS12@2'
2203001-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0025	03/01/22	03/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0385	96.2 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.7 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0371	92.8 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0026	03/01/22	03/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.0	80.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS12@2'
2203001-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0178	53.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0205	61.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/01/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.689	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	10.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	99.0		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/01/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.73		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS12@2'
2203001-04 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS13@5'
2203001-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/22 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0025	03/01/22	03/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/22 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0387	96.8 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0388	96.9 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0372	93.1 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/22 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0026	03/01/22	03/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/22 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.56	76.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS13@5'
2203001-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0151	45.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0175	52.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/01/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.752	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	36.7	0.400	"	"	"	"	"	"	
Selenium	0.484	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.0		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/01/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.95		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS13@5'
2203001-05 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS14@2'
2203001-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0025	03/01/22	03/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0404	101 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0385	96.2 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0372	93.1 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0026	03/01/22	03/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.97	79.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS14@2'
2203001-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0173	51.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0207	62.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/01/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.458	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	10.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	99.2		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/01/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.92		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS14@2'
2203001-06 (Soil)

Summit Scientific

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS15@5'
2203001-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0025	03/01/22	03/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0373	93.2 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0418	104 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0395	98.8 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0026	03/01/22	03/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.88	79.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS15@5'
2203001-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0221	66.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0239	71.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/01/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	6.94	0.400	"	"	"	"	"	"	
Selenium	0.689	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.6		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/01/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	3.81		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS15@5'
2203001-07 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS16@8'
2203001-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0025	03/01/22	03/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/01/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0380	95.0 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.4 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0026	03/01/22	03/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.5	83.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS16@8'
2203001-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0102	03/07/22	03/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0176	52.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0188	56.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/01/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	4.00	0.400	"	"	"	"	"	"	
Selenium	0.290	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/01/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.22		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

SS16@8'
2203001-08 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

BKG02@2'
2203001-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/01/22 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.44	0.204	mg/kg dry	1	BFC0082	03/04/22	03/09/22	EPA 6020B	
Barium	7.52	0.407	"	"	"	"	"	"	
Cadmium	ND	0.204	"	"	"	"	"	"	
Copper	4.33	0.407	"	"	"	"	"	"	
Lead	3.65	0.204	"	"	"	"	"	"	
Nickel	1.09	0.407	"	"	"	"	"	"	
Selenium	0.757	0.265	"	"	"	"	"	"	
Silver	0.0616	0.0204	"	"	"	"	"	"	
Zinc	13.1	0.407	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/22 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0186	03/10/22	03/10/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	98.2		%	1	BFC0115	03/07/22	03/07/22	Calculation	

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

Date Sampled: **03/01/22 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.50		pH Units	1	BFE0121	05/06/22	05/06/22	EPA 9045D	I-02

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

BKG02@5'
2203001-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/01/22 09:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.708	0.213	mg/kg dry	1	BFC0082	03/04/22	03/09/22	EPA 6020B	
Barium	25.0	0.426	"	"	"	"	"	"	
Cadmium	ND	0.213	"	"	"	"	"	"	
Copper	2.75	0.426	"	"	"	"	"	"	
Lead	2.86	0.213	"	"	"	"	"	"	
Nickel	3.04	0.426	"	"	"	"	"	"	
Selenium	0.859	0.277	"	"	"	"	"	"	
Silver	0.0298	0.0213	"	"	"	"	"	"	
Zinc	15.0	0.426	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/22 09:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0186	03/10/22	03/10/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 09:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.8		%	1	BFC0115	03/07/22	03/07/22	Calculation	

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

Date Sampled: **03/01/22 09:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.04		pH Units	1	BFE0121	05/06/22	05/06/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

BKG02@8'
2203001-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/01/22 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	ND	0.209	mg/kg dry	1	BFC0082	03/04/22	03/09/22	EPA 6020B	
Barium	4.23	0.417	"	"	"	"	"	"	
Cadmium	ND	0.209	"	"	"	"	"	"	
Copper	0.891	0.417	"	"	"	"	"	"	
Lead	1.14	0.209	"	"	"	"	"	"	
Nickel	1.06	0.417	"	"	"	"	"	"	
Selenium	0.750	0.271	"	"	"	"	"	"	
Silver	ND	0.0209	"	"	"	"	"	"	
Zinc	6.22	0.417	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/22 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0186	03/10/22	03/10/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	95.9		%	1	BFC0115	03/07/22	03/07/22	Calculation	

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

Date Sampled: **03/01/22 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.01		pH Units	1	BFE0121	05/06/22	05/06/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

BKG03@2'
2203001-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/01/22 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.73	0.205	mg/kg dry	1	BFC0082	03/04/22	03/09/22	EPA 6020B	
Barium	11.2	0.410	"	"	"	"	"	"	
Cadmium	ND	0.205	"	"	"	"	"	"	
Copper	9.76	0.410	"	"	"	"	"	"	
Lead	12.5	0.205	"	"	"	"	"	"	
Nickel	1.30	0.410	"	"	"	"	"	"	
Selenium	0.512	0.267	"	"	"	"	"	"	
Silver	0.147	0.0205	"	"	"	"	"	"	
Zinc	28.8	0.410	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/22 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0186	03/10/22	03/10/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	97.5		%	1	BFC0115	03/07/22	03/07/22	Calculation	

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

Date Sampled: **03/01/22 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.36		pH Units	1	BFE0121	05/06/22	05/06/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

BKG03@5'
2203001-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/01/22 12:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.96	0.224	mg/kg dry	1	BFC0082	03/04/22	03/09/22	EPA 6020B	
Barium	32.4	0.448	"	"	"	"	"	"	
Cadmium	ND	0.224	"	"	"	"	"	"	
Copper	2.98	0.448	"	"	"	"	"	"	
Lead	2.92	0.224	"	"	"	"	"	"	
Nickel	2.78	0.448	"	"	"	"	"	"	
Selenium	0.753	0.291	"	"	"	"	"	"	
Silver	0.0249	0.0224	"	"	"	"	"	"	
Zinc	14.3	0.448	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/22 12:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0186	03/10/22	03/10/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 12:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	89.4		%	1	BFC0115	03/07/22	03/07/22	Calculation	

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

Date Sampled: **03/01/22 12:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.84		pH Units	1	BFE0121	05/06/22	05/06/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

BKG03@8'
2203001-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/01/22 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.45	0.210	mg/kg dry	1	BFC0082	03/04/22	03/09/22	EPA 6020B	
Barium	28.7	0.421	"	"	"	"	"	"	
Cadmium	ND	0.210	"	"	"	"	"	"	
Copper	5.46	0.421	"	"	"	"	"	"	
Lead	5.80	0.210	"	"	"	"	"	"	
Nickel	2.40	0.421	"	"	"	"	"	"	
Selenium	0.753	0.274	"	"	"	"	"	"	
Silver	0.0682	0.0210	"	"	"	"	"	"	
Zinc	18.7	0.421	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/22 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0186	03/10/22	03/10/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/22 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	95.0		%	1	BFC0115	03/07/22	03/07/22	Calculation	

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

Date Sampled: **03/01/22 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.04		pH Units	1	BFE0121	05/06/22	05/06/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0025 - EPA 5030 Soil MS

Blank (BFC0025-BLK1)

Prepared & Analyzed: 03/01/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0369		"	0.0400		92.2	70-130			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.0365		"	0.0400		91.2	70-130			

LCS (BFC0025-BS1)

Prepared & Analyzed: 03/01/22

Benzene	0.0638	0.0020	mg/kg	0.0750		85.1	70-130			
Toluene	0.0660	0.0050	"	0.0750		88.0	70-130			
Ethylbenzene	0.0652	0.0050	"	0.0750		87.0	70-130			
m,p-Xylene	0.136	0.010	"	0.150		90.9	70-130			
o-Xylene	0.0695	0.0050	"	0.0750		92.7	70-130			
1,2,4-Trimethylbenzene	0.0699	0.0050	"	0.0750		93.2	70-130			
1,3,5-Trimethylbenzene	0.0694	0.0050	"	0.0750		92.6	70-130			
Naphthalene	0.0625	0.0038	"	0.0750		83.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0356		"	0.0400		89.1	70-130			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2	70-130			

Matrix Spike (BFC0025-MS1)

Source: 2203001-01

Prepared & Analyzed: 03/01/22

Benzene	0.0662	0.0020	mg/kg	0.0750	ND	88.2	70-130			
Toluene	0.0678	0.0050	"	0.0750	ND	90.4	70-130			
Ethylbenzene	0.0654	0.0050	"	0.0750	ND	87.2	70-130			
m,p-Xylene	0.136	0.010	"	0.150	ND	90.9	70-130			
o-Xylene	0.0717	0.0050	"	0.0750	ND	95.6	70-130			
1,2,4-Trimethylbenzene	0.0721	0.0050	"	0.0750	ND	96.2	70-130			
1,3,5-Trimethylbenzene	0.0690	0.0050	"	0.0750	ND	92.0	70-130			
Naphthalene	0.0764	0.0038	"	0.0750	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		99.1	70-130			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.6	70-130			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFC0025 - EPA 5030 Soil MS

Matrix Spike Dup (BFC0025-MSD1)		Source: 2203001-01			Prepared & Analyzed: 03/01/22					
Benzene	0.0662	0.0020	mg/kg	0.0750	ND	88.2	70-130	0.00	30	
Toluene	0.0704	0.0050	"	0.0750	ND	93.8	70-130	3.65	30	
Ethylbenzene	0.0685	0.0050	"	0.0750	ND	91.3	70-130	4.66	30	
m,p-Xylene	0.141	0.010	"	0.150	ND	94.0	70-130	3.35	30	
o-Xylene	0.0734	0.0050	"	0.0750	ND	97.8	70-130	2.23	30	
1,2,4-Trimethylbenzene	0.0757	0.0050	"	0.0750	ND	101	70-130	4.87	30	
1,3,5-Trimethylbenzene	0.0734	0.0050	"	0.0750	ND	97.8	70-130	6.11	30	
Naphthalene	0.0846	0.0038	"	0.0750	ND	113	70-130	10.3	30	
Surrogate: 1,2-Dichloroethane-d4		0.0392	"	0.0400		98.0	70-130			
Surrogate: Toluene-d8		0.0400	"	0.0400		100	70-130			
Surrogate: 4-Bromofluorobenzene		0.0382	"	0.0400		95.6	70-130			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFC0026 - EPA 3550A

Blank (BFC0026-BLK1)

Prepared & Analyzed: 03/01/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFC0026-BS1)

Prepared & Analyzed: 03/01/22

C10-C28 (DRO)	398	50	mg/kg	500	79.6	70-130
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Matrix Spike (BFC0026-MS1)

Source: 2203001-01

Prepared & Analyzed: 03/01/22

C10-C28 (DRO)	365	50	mg/kg	500	10.6	70.9	70-130
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Matrix Spike Dup (BFC0026-MSD1)

Source: 2203001-01

Prepared & Analyzed: 03/01/22

C10-C28 (DRO)	365	50	mg/kg	500	10.6	70.9	70-130	0.00521	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0102 - EPA 5030 Soil MS

Blank (BFC0102-BLK1)

Prepared & Analyzed: 03/07/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0195		"	0.0333		58.5	40-150			
Surrogate: Fluoranthene-d10	0.0203		"	0.0333		61.0	40-150			

LCS (BFC0102-BS1)

Prepared: 03/07/22 Analyzed: 03/08/22

Acenaphthene	0.0198	0.00500	mg/kg	0.0333		59.4	31-137			
Anthracene	0.0212	0.00500	"	0.0333		63.7	30-120			
Benzo (a) anthracene	0.0206	0.00500	"	0.0333		61.9	30-120			
Benzo (a) pyrene	0.0189	0.00500	"	0.0333		56.8	30-120			
Benzo (b) fluoranthene	0.0184	0.00500	"	0.0333		55.1	30-120			
Benzo (k) fluoranthene	0.0210	0.00500	"	0.0333		62.9	30-120			
Chrysene	0.0230	0.00500	"	0.0333		69.1	30-120			
Dibenz (a,h) anthracene	0.0269	0.00500	"	0.0333		80.7	30-120			
Fluoranthene	0.0240	0.00500	"	0.0333		72.0	30-120			
Fluorene	0.0213	0.00500	"	0.0333		64.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0291	0.00500	"	0.0333		87.4	30-120			
Pyrene	0.0231	0.00500	"	0.0333		69.4	35-142			
1-Methylnaphthalene	0.0196	0.00500	"	0.0333		58.7	35-142			
2-Methylnaphthalene	0.0195	0.00500	"	0.0333		58.6	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0194		"	0.0333		58.2	40-150			
Surrogate: Fluoranthene-d10	0.0227		"	0.0333		68.2	40-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0102 - EPA 5030 Soil MS

Matrix Spike (BFC0102-MS1)

Source: 2202315-01

Prepared: 03/07/22 Analyzed: 03/08/22

Acenaphthene	0.0245	0.00500	mg/kg	0.0333	ND	73.6	31-137		
Anthracene	0.0275	0.00500	"	0.0333	ND	82.4	30-120		
Benzo (a) anthracene	0.0245	0.00500	"	0.0333	ND	73.6	30-120		
Benzo (a) pyrene	0.0226	0.00500	"	0.0333	ND	67.7	30-120		
Benzo (b) fluoranthene	0.0221	0.00500	"	0.0333	ND	66.4	30-120		
Benzo (k) fluoranthene	0.0245	0.00500	"	0.0333	ND	73.6	30-120		
Chrysene	0.0251	0.00500	"	0.0333	ND	75.3	30-120		
Dibenz (a,h) anthracene	0.0298	0.00500	"	0.0333	ND	89.5	30-120		
Fluoranthene	0.0313	0.00500	"	0.0333	ND	94.0	30-120		
Fluorene	0.0247	0.00500	"	0.0333	ND	74.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0343	0.00500	"	0.0333	ND	103	30-120		
Pyrene	0.0262	0.00500	"	0.0333	ND	78.6	35-142		
1-Methylnaphthalene	0.0254	0.00500	"	0.0333	ND	76.2	15-130		
2-Methylnaphthalene	0.0260	0.00500	"	0.0333	ND	78.1	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0256		"	0.0333		76.7	40-150		
Surrogate: Fluoranthene-d10	0.0274		"	0.0333		82.3	40-150		

Matrix Spike Dup (BFC0102-MSD1)

Source: 2202315-01

Prepared: 03/07/22 Analyzed: 03/08/22

Acenaphthene	0.0200	0.00500	mg/kg	0.0333	ND	60.1	31-137	20.2	30
Anthracene	0.0223	0.00500	"	0.0333	ND	67.0	30-120	20.6	30
Benzo (a) anthracene	0.0211	0.00500	"	0.0333	ND	63.3	30-120	15.1	30
Benzo (a) pyrene	0.0193	0.00500	"	0.0333	ND	58.0	30-120	15.3	30
Benzo (b) fluoranthene	0.0192	0.00500	"	0.0333	ND	57.5	30-120	14.4	30
Benzo (k) fluoranthene	0.0216	0.00500	"	0.0333	ND	64.9	30-120	12.6	30
Chrysene	0.0217	0.00500	"	0.0333	ND	65.0	30-120	14.6	30
Dibenz (a,h) anthracene	0.0251	0.00500	"	0.0333	ND	75.3	30-120	17.2	30
Fluoranthene	0.0252	0.00500	"	0.0333	ND	75.5	30-120	21.8	30
Fluorene	0.0212	0.00500	"	0.0333	ND	63.6	30-120	15.4	30
Indeno (1,2,3-cd) pyrene	0.0288	0.00500	"	0.0333	ND	86.3	30-120	17.5	30
Pyrene	0.0222	0.00500	"	0.0333	ND	66.7	35-142	16.4	30
1-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.5	15-130	24.5	50
2-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.5	15-130	27.1	50
Surrogate: 2-Methylnaphthalene-d10	0.0190		"	0.0333		57.0	40-150		
Surrogate: Fluoranthene-d10	0.0242		"	0.0333		72.5	40-150		

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BFC0082 - EPA 3050B

Blank (BFC0082-BLK1)

Prepared: 03/04/22 Analyzed: 03/09/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BFC0082-BS1)

Prepared: 03/04/22 Analyzed: 03/09/22

Arsenic	40.5	0.200	mg/kg wet	40.0	101	80-120
Barium	34.7	0.400	"	40.0	86.7	80-120
Cadmium	1.81	0.200	"	2.00	90.7	80-120
Copper	36.3	0.400	"	40.0	90.8	80-120
Lead	17.2	0.200	"	20.0	85.8	80-120
Nickel	34.7	0.400	"	40.0	86.8	80-120
Selenium	3.33	0.260	"	4.00	83.3	80-120
Silver	1.84	0.0200	"	2.00	91.8	80-120
Zinc	41.3	0.400	"	40.0	103	80-120

Duplicate (BFC0082-DUP1)

Source: 2203001-09

Prepared: 03/04/22 Analyzed: 03/09/22

Arsenic	1.39	0.204	mg/kg dry	1.44	3.69	20
Barium	7.83	0.407	"	7.52	4.06	20
Cadmium	0.0754	0.204	"	0.0779	3.20	20
Copper	4.33	0.407	"	4.33	0.169	20
Lead	3.65	0.204	"	3.65	0.0954	20
Nickel	1.10	0.407	"	1.09	1.22	20
Selenium	0.777	0.265	"	0.757	2.61	20
Silver	0.0631	0.0204	"	0.0616	2.32	20
Zinc	13.4	0.407	"	13.1	1.97	20

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFC0082 - EPA 3050B

Matrix Spike (BFC0082-MS1)		Source: 2203001-09			Prepared: 03/04/22 Analyzed: 03/09/22					
Arsenic	43.3	0.204	mg/kg dry	40.7	1.44	103	75-125			
Barium	41.4	0.407	"	40.7	7.52	83.2	75-125			
Cadmium	1.90	0.204	"	2.04	0.0779	89.4	75-125			
Copper	40.5	0.407	"	40.7	4.33	88.8	75-125			
Lead	20.1	0.204	"	20.4	3.65	80.7	75-125			
Nickel	35.9	0.407	"	40.7	1.09	85.4	75-125			
Selenium	4.06	0.265	"	4.07	0.757	81.2	75-125			
Silver	1.82	0.0204	"	2.04	0.0616	86.2	75-125			
Zinc	57.1	0.407	"	40.7	13.1	108	75-125			

Matrix Spike Dup (BFC0082-MSD1)		Source: 2203001-09			Prepared: 03/04/22 Analyzed: 03/09/22					
Arsenic	43.7	0.204	mg/kg dry	40.7	1.44	104	75-125	0.926	25	
Barium	43.9	0.407	"	40.7	7.52	89.4	75-125	5.89	25	
Cadmium	1.91	0.204	"	2.04	0.0779	90.0	75-125	0.597	25	
Copper	40.9	0.407	"	40.7	4.33	89.7	75-125	0.958	25	
Lead	20.1	0.204	"	20.4	3.65	80.9	75-125	0.227	25	
Nickel	36.3	0.407	"	40.7	1.09	86.4	75-125	1.13	25	
Selenium	4.03	0.265	"	4.07	0.757	80.3	75-125	0.883	25	
Silver	1.84	0.0204	"	2.04	0.0616	87.5	75-125	1.51	25	
Zinc	55.4	0.407	"	40.7	13.1	104	75-125	3.07	25	

Batch BFE0197 - EPA 3050B

Blank (BFE0197-BLK1)		Prepared: 05/10/22 Analyzed: 05/20/22								
Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Selenium	ND	0.260	"							

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0197 - EPA 3050B

LCS (BFE0197-BS1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	34.3	0.200	mg/kg wet	40.0		85.7	80-120
Barium	33.4	0.400	"	40.0		83.5	80-120
Selenium	3.57	0.260	"	4.00		89.3	80-120

Duplicate (BFE0197-DUP1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg dry		ND				20
Barium	5.35	0.400	"		5.46			2.08	20
Selenium	0.290	0.260	"		0.312			7.10	20

Matrix Spike (BFE0197-MS1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	32.4	0.200	mg/kg dry	40.7	ND	79.7	75-125
Barium	39.1	0.400	"	40.7	5.46	82.7	75-125
Selenium	3.68	0.260	"	4.07	0.312	82.8	75-125

Matrix Spike Dup (BFE0197-MSD1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	32.6	0.200	mg/kg dry	40.7	ND	80.2	75-125	0.633	25
Barium	37.2	0.400	"	40.7	5.46	78.0	75-125	4.97	25
Selenium	3.38	0.260	"	4.07	0.312	75.5	75-125	8.39	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFC0186 - 3060A Mod

Blank (BFC0186-BLK1)

Prepared & Analyzed: 03/10/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFC0186-BS1)

Prepared & Analyzed: 03/10/22

Chromium, Hexavalent 26.6 0.30 mg/kg wet 25.0 107 80-120

Duplicate (BFC0186-DUP1)

Source: 2202314-01

Prepared & Analyzed: 03/10/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFC0186-MS1)

Source: 2202314-01

Prepared & Analyzed: 03/10/22

Chromium, Hexavalent 30.2 0.30 mg/kg dry 30.1 ND 100 75-125

Matrix Spike Dup (BFC0186-MSD1)

Source: 2202314-01

Prepared & Analyzed: 03/10/22

Chromium, Hexavalent 31.1 0.30 mg/kg dry 30.1 ND 103 75-125 2.94 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

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

Summit Scientific

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

Batch BFC0115 - General Preparation

Duplicate (BFC0115-DUP1)

Source: 2203001-09

Prepared & Analyzed: 03/07/22

% Solids	98.3	%		98.2		0.0887	20
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Batch BFE0231 - General Preparation

Duplicate (BFE0231-DUP1)

Source: 2202315-01

Prepared & Analyzed: 05/11/22

% Solids	97.8	%		98.3		0.488	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFE0121 - General Preparation

LCS (BFE0121-BS1)

Prepared & Analyzed: 05/06/22

pH	9.06		pH Units	9.18		98.7	95-105
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Duplicate (BFE0121-DUP1)

Source: 2203001-09

Prepared & Analyzed: 05/06/22

pH	8.49		pH Units		8.50			0.118	20
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Batch BFE0561 - General Preparation

LCS (BFE0561-BS1)

Prepared & Analyzed: 05/25/22

pH	9.04		pH Units	9.18		98.5	95-105
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Duplicate (BFE0561-DUP1)

Source: 2202315-01

Prepared & Analyzed: 05/25/22

pH	7.13		pH Units		6.99			1.98	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 08:31

Notes and Definitions

I-02 This sample was analyzed outside of the recommended holding time.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 26, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2203027

Enclosed are the results of analyses for samples received by Summit Scientific on 03/02/22 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Muri Premer
Project Manager



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS18@5'	2203027-01	Soil	03/02/22 10:10	03/02/22 16:00
SS17@2'	2203027-02	Soil	03/02/22 10:00	03/02/22 16:00
SS19@2'	2203027-03	Soil	03/02/22 14:40	03/02/22 16:00
SS20@5'	2203027-04	Soil	03/02/22 14:55	03/02/22 16:00
SS21@8'	2203027-05	Soil	03/02/22 15:05	03/02/22 16:00

Summit Scientific

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

Summit Scientific

S₂

2003027

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Warning 3, 4-2 Tank Battery
Sampler Name: Sam Adams Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR				
1	SS18 @ 5'	3/2/22	1410	3			X			X				X	X	X					pH, EC, SAR by saturated paste 1-m, 2-m, chrysene, Fluorene
2	SS17 @ 2'		1000	3			X			X				X	X	X					
3	SS19 @ 2'		1446	3			X			X				X	X	X					
4	SS20 @ 5'		1455	3			X			X				X	X	X					
5	SS21 @ 8'		1505	3			X			X				X	X	X					
6																					
7																					
8																					
9																					
10																					

Relinquished by: <u>[Signature]</u>	Date/Time: <u>3/2/22</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>3/2/22</u>	Turn Around Time (Check) Same Day <u>X</u> 72 hours <u>—</u> 24 hours <u>—</u> Standard <u>—</u> 48 hours <u>—</u> Sample Integrity: Temperature Upon Receipt: <u>3.3</u> Samples Intact: <u>(Yes)</u> No	Notes:
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time: <u>3/2/22</u>	Received by: <u>[Signature]</u>	Date/Time: <u>3/2/22</u>		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order#

2203027

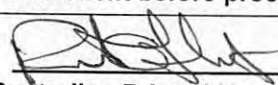
Client: Pac/TasmanClient Project ID: Werning 3, 4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	3.3
-----------	-----

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

 Custodian Printed Name or Initials

 3.2.22
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS18@5'
2203027-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0041	03/02/22	03/02/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/02/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0368	92.0 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	101 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0042	03/02/22	03/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/02/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	3.96	31.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS18@5'
2203027-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/02/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0044	03/03/22	03/04/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/02/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0294	88.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0252	75.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/02/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	7.45	0.400	"	"	"	"	"	"	
Selenium	2.11	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/02/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.6		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/02/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	3.38		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS18@5'
2203027-01 (Soil)

Summit Scientific

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

Summit Scientific

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A handwritten signature in black ink, appearing to be 'MSM'.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS17@2'
2203027-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0041	03/02/22	03/02/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/02/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0396	99.1 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0392	98.0 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0393	98.3 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0042	03/02/22	03/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/02/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.7	85.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS17@2'
2203027-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/02/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0044	03/03/22	03/04/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/02/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0238	71.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0202	60.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/02/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.692	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	8.00	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/02/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	99.1		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/02/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.62		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS17@2'
2203027-02 (Soil)

Summit Scientific

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS19@2'
2203027-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0041	03/02/22	03/02/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/02/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0385	96.2 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0423	106 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0412	103 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0042	03/02/22	03/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/02/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.1	80.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS19@2'
2203027-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/02/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0044	03/03/22	03/04/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/02/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0271	81.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0234	70.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/02/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.27	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	11.8	0.400	"	"	"	"	"	"	
Selenium	0.359	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/02/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.2		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/02/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.02		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS19@2'
2203027-03 (Soil)

Summit Scientific

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS20@5'
2203027-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/22 14:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0041	03/02/22	03/02/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/02/22 14:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0388	97.0 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0427	107 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/22 14:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0042	03/02/22	03/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/02/22 14:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.2	89.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS20@5'
2203027-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/02/22 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0044	03/03/22	03/04/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/02/22 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0293	87.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0262	78.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/02/22 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.372	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	6.32	0.400	"	"	"	"	"	"	
Selenium	0.768	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/02/22 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.8		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/02/22 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	3.26		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS20@5'
2203027-04 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS21@8'
2203027-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/22 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0041	03/02/22	03/02/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	5.3	0.50	"	"	"	"	"	"	

Date Sampled: **03/02/22 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0366	91.5 %	70-130		"	"	"	"	
Surrogate: Toluene-d8	0.0417	104 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0446	112 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/22 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0042	03/02/22	03/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/02/22 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.3	90.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS21@8'
2203027-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/02/22 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0044	03/03/22	03/04/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/02/22 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0276	82.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0239	71.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/02/22 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.213	0.200	mg/kg dry	1	BFE0197	05/10/22	05/20/22	EPA 6020B	
Barium	5.84	0.400	"	"	"	"	"	"	
Selenium	0.436	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/02/22 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.6		%	1	BFE0231	05/11/22	05/11/22	Calculation	

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

Date Sampled: **03/02/22 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	3.25		pH Units	1	BFE0561	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

SS21@8'
2203027-05 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0041 - EPA 5030 Soil MS

Blank (BFC0041-BLK1)

Prepared: 03/02/22 Analyzed: 03/03/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0375		"	0.0400		93.8	70-130			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	70-130			

LCS (BFC0041-BS1)

Prepared: 03/02/22 Analyzed: 03/03/22

Benzene	0.0617	0.0020	mg/kg	0.0750		82.3	70-130			
Toluene	0.0645	0.0050	"	0.0750		86.0	70-130			
Ethylbenzene	0.0616	0.0050	"	0.0750		82.2	70-130			
m,p-Xylene	0.126	0.010	"	0.150		83.8	70-130			
o-Xylene	0.0656	0.0050	"	0.0750		87.4	70-130			
1,2,4-Trimethylbenzene	0.0676	0.0050	"	0.0750		90.2	70-130			
1,3,5-Trimethylbenzene	0.0657	0.0050	"	0.0750		87.6	70-130			
Naphthalene	0.0701	0.0038	"	0.0750		93.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0368		"	0.0400		92.0	70-130			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0400		95.3	70-130			

Matrix Spike (BFC0041-MS1)

Source: 2203028-01

Prepared: 03/02/22 Analyzed: 03/03/22

Benzene	0.0629	0.0020	mg/kg	0.0750	ND	83.8	70-130			
Toluene	0.0666	0.0050	"	0.0750	ND	88.8	70-130			
Ethylbenzene	0.0660	0.0050	"	0.0750	ND	88.0	70-130			
m,p-Xylene	0.136	0.010	"	0.150	ND	90.5	70-130			
o-Xylene	0.0712	0.0050	"	0.0750	ND	95.0	70-130			
1,2,4-Trimethylbenzene	0.0742	0.0050	"	0.0750	ND	99.0	70-130			
1,3,5-Trimethylbenzene	0.0726	0.0050	"	0.0750	ND	96.8	70-130			
Naphthalene	0.0830	0.0038	"	0.0750	ND	111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.4	70-130			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	70-130			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFC0041 - EPA 5030 Soil MS

Matrix Spike Dup (BFC0041-MSD1)	Source: 2203028-01			Prepared: 03/02/22 Analyzed: 03/03/22						
Benzene	0.0636	0.0020	mg/kg	0.0750	ND	84.8	70-130	1.09	30	
Toluene	0.0683	0.0050	"	0.0750	ND	91.0	70-130	2.49	30	
Ethylbenzene	0.0662	0.0050	"	0.0750	ND	88.2	70-130	0.318	30	
m,p-Xylene	0.137	0.010	"	0.150	ND	91.2	70-130	0.771	30	
o-Xylene	0.0713	0.0050	"	0.0750	ND	95.1	70-130	0.0842	30	
1,2,4-Trimethylbenzene	0.0752	0.0050	"	0.0750	ND	100	70-130	1.32	30	
1,3,5-Trimethylbenzene	0.0723	0.0050	"	0.0750	ND	96.4	70-130	0.455	30	
Naphthalene	0.0874	0.0038	"	0.0750	ND	116	70-130	5.07	30	
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400		95.3	70-130			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.5	70-130			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFC0042 - EPA 3550A

Blank (BFC0042-BLK1)

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFC0042-BS1)

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	468	50	mg/kg	500	93.7	70-130
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Matrix Spike (BFC0042-MS1)

Source: 2203021-01

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	440	50	mg/kg	500	49.3	78.0	70-130
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Matrix Spike Dup (BFC0042-MSD1)

Source: 2203021-01

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	404	50	mg/kg	500	49.3	71.0	70-130	8.35	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0044 - EPA 5030 Soil MS

Blank (BFC0044-BLK1)

Prepared & Analyzed: 03/03/22

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0305		"	0.0333		91.5		40-150			
Surrogate: Fluoranthene-d10	0.0237		"	0.0333		71.2		40-150			

LCS (BFC0044-BS1)

Prepared & Analyzed: 03/03/22

Acenaphthene	0.0214	0.00500	mg/kg	0.0333		64.3		31-137			
Anthracene	0.0210	0.00500	"	0.0333		63.1		30-120			
Benzo (a) anthracene	0.0235	0.00500	"	0.0333		70.6		30-120			
Benzo (a) pyrene	0.0191	0.00500	"	0.0333		57.3		30-120			
Benzo (b) fluoranthene	0.0205	0.00500	"	0.0333		61.4		30-120			
Benzo (k) fluoranthene	0.0219	0.00500	"	0.0333		65.8		30-120			
Chrysene	0.0237	0.00500	"	0.0333		71.1		30-120			
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333		46.0		30-120			
Fluoranthene	0.0216	0.00500	"	0.0333		64.8		30-120			
Fluorene	0.0212	0.00500	"	0.0333		63.7		30-120			
Indeno (1,2,3-cd) pyrene	0.0186	0.00500	"	0.0333		55.9		30-120			
Pyrene	0.0231	0.00500	"	0.0333		69.2		35-142			
1-Methylnaphthalene	0.0234	0.00500	"	0.0333		70.3		35-142			
2-Methylnaphthalene	0.0255	0.00500	"	0.0333		76.4		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0280		"	0.0333		84.1		40-150			
Surrogate: Fluoranthene-d10	0.0228		"	0.0333		68.5		40-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0044 - EPA 5030 Soil MS

Matrix Spike (BFC0044-MS1)

Source: 2203022-01

Prepared & Analyzed: 03/03/22

Acenaphthene	0.0198	0.00500	mg/kg	0.0333	ND	59.5	31-137		
Anthracene	0.0199	0.00500	"	0.0333	ND	59.8	30-120		
Benzo (a) anthracene	0.0218	0.00500	"	0.0333	ND	65.4	30-120		
Benzo (a) pyrene	0.0175	0.00500	"	0.0333	ND	52.5	30-120		
Benzo (b) fluoranthene	0.0187	0.00500	"	0.0333	ND	56.0	30-120		
Benzo (k) fluoranthene	0.0201	0.00500	"	0.0333	ND	60.4	30-120		
Chrysene	0.0219	0.00500	"	0.0333	ND	65.7	30-120		
Dibenz (a,h) anthracene	0.0151	0.00500	"	0.0333	ND	45.4	30-120		
Fluoranthene	0.0204	0.00500	"	0.0333	ND	61.1	30-120		
Fluorene	0.0201	0.00500	"	0.0333	ND	60.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0186	0.00500	"	0.0333	ND	55.9	30-120		
Pyrene	0.0227	0.00500	"	0.0333	ND	68.0	35-142		
1-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.3	15-130		
2-Methylnaphthalene	0.0236	0.00500	"	0.0333	ND	70.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0266		"	0.0333		79.8	40-150		
Surrogate: Fluoranthene-d10	0.0219		"	0.0333		65.7	40-150		

Matrix Spike Dup (BFC0044-MSD1)

Source: 2203022-01

Prepared & Analyzed: 03/03/22

Acenaphthene	0.0187	0.00500	mg/kg	0.0333	ND	56.2	31-137	5.70	30
Anthracene	0.0181	0.00500	"	0.0333	ND	54.2	30-120	9.93	30
Benzo (a) anthracene	0.0212	0.00500	"	0.0333	ND	63.5	30-120	2.99	30
Benzo (a) pyrene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	5.88	30
Benzo (b) fluoranthene	0.0176	0.00500	"	0.0333	ND	52.9	30-120	5.69	30
Benzo (k) fluoranthene	0.0187	0.00500	"	0.0333	ND	56.0	30-120	7.57	30
Chrysene	0.0207	0.00500	"	0.0333	ND	62.1	30-120	5.66	30
Dibenz (a,h) anthracene	0.0137	0.00500	"	0.0333	ND	41.0	30-120	9.99	30
Fluoranthene	0.0187	0.00500	"	0.0333	ND	56.2	30-120	8.29	30
Fluorene	0.0188	0.00500	"	0.0333	ND	56.3	30-120	6.58	30
Indeno (1,2,3-cd) pyrene	0.0179	0.00500	"	0.0333	ND	53.6	30-120	4.17	30
Pyrene	0.0219	0.00500	"	0.0333	ND	65.6	35-142	3.58	30
1-Methylnaphthalene	0.0196	0.00500	"	0.0333	ND	58.8	15-130	13.4	50
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	63.1	15-130	11.5	50
Surrogate: 2-Methylnaphthalene-d10	0.0244		"	0.0333		73.3	40-150		
Surrogate: Fluoranthene-d10	0.0203		"	0.0333		60.9	40-150		

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0197 - EPA 3050B

Blank (BFE0197-BLK1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BFE0197-BS1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	34.3	0.200	mg/kg wet	40.0		85.7	80-120			
Barium	33.4	0.400	"	40.0		83.5	80-120			
Selenium	3.57	0.260	"	4.00		89.3	80-120			

Duplicate (BFE0197-DUP1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg dry		ND				20	
Barium	5.35	0.400	"		5.46			2.08	20	
Selenium	0.290	0.260	"		0.312			7.10	20	

Matrix Spike (BFE0197-MS1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	32.4	0.200	mg/kg dry	40.7	ND	79.7	75-125			
Barium	39.1	0.400	"	40.7	5.46	82.7	75-125			
Selenium	3.68	0.260	"	4.07	0.312	82.8	75-125			

Matrix Spike Dup (BFE0197-MSD1)

Source: 2202315-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	32.6	0.200	mg/kg dry	40.7	ND	80.2	75-125	0.633	25	
Barium	37.2	0.400	"	40.7	5.46	78.0	75-125	4.97	25	
Selenium	3.38	0.260	"	4.07	0.312	75.5	75-125	8.39	25	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

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

Summit Scientific

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

Batch BFE0231 - General Preparation

Duplicate (BFE0231-DUP1)

Source: 2202315-01

Prepared & Analyzed: 05/11/22

% Solids	97.8	%	98.3	0.488	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

05/26/22 10:41

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

Summit Scientific

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

Batch BFE0561 - General Preparation

LCS (BFE0561-BS1)

Prepared & Analyzed: 05/25/22

pH	9.04	pH Units	9.18	98.5	95-105
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Duplicate (BFE0561-DUP1)

Source: 2202315-01

Prepared & Analyzed: 05/25/22

pH	7.13	pH Units	6.99	1.98	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:41

Notes and Definitions

I-02 This sample was analyzed outside of the recommended holding time.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 26, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2203470

Enclosed are the results of analyses for samples received by Summit Scientific on 03/28/22 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS22@8'	2203470-01	Soil	03/28/22 10:28	03/28/22 16:00
SS25@2'	2203470-02	Soil	03/28/22 11:50	03/28/22 16:00
SS26@5'	2203470-03	Soil	03/28/22 12:00	03/28/22 16:00
SS27@8'	2203470-04	Soil	03/28/22 13:25	03/28/22 16:00
SS28@2'	2203470-05	Soil	03/28/22 14:38	03/28/22 16:00
SS29@5'	2203470-06	Soil	03/28/22 14:59	03/28/22 16:00
SS23@2.5'	2203470-07	Soil	03/28/22 10:41	03/28/22 16:00
SS24@2.5'	2203470-08	Soil	03/28/22 10:50	03/28/22 16:00

Summit Scientific

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

Summit Scientific

S₂

2203 470.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 2

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020

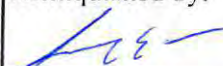
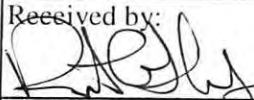
Phone: 303-487-1228

Project Name: Warning 3, 4-2 Tank Battery

Sampler Name: Sam Anderson

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR		
1	SS22 e 8'	3/28/22	1028	3			X			X			X	X	X				pH, EC, SAR by saturated paste Chrysene, Fluorene, 1-m, 2-m
2	SS25 e 2'		1150										X	X	X				X
3	SS26 e 5'		1200										X	X	X				X
4	SS27 e 8'		1325										X	X	X				X
5	SS28 e 2'		1438										X	X	X				X
6	SS29 e 5'		1459										X	X	X				X
7																			
8																			
9																			
10																			

Relinquished by: 	Date/Time: 1600 3/29/22	Received by: Tasman's Lock Box	Date/Time: 1600 3/28/22	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 3 28 22 1600	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 33 Samples Intact: (Yes) No	

Summit Scientific

S₂

2203470.2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 2 of 2

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020

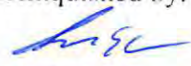
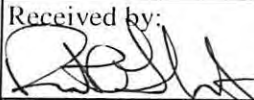
Phone: 303-487-1228

Project Name: 'Werning 3, 4-2 Tank Battery'

Sampler Name: Sam Anderson

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested								Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAH's	Metals		
1	SS23 e 2.5'	3/28/20	1641	3			X			X			X	X	X	X	X	X	X	X	pH, EC, SAR by saturated paste
2	SS24 e 2.5'	↓	1650	3			X			X			X	X	X	X	X	X	X	X	
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 1600 3/28/20	Received by: Tasman's Lock Box	Date/Time: 1600 3/28/20	Turn Around Time (Check) Same Day — 72 hours — 24 hours — Standard <input checked="" type="checkbox"/> 48 hours —	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 325822 1600	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 3.3 Samples Intact: (Yes) No	



2/2

2203470

Sample Receipt Checklist

S2 Work Order#

Client: PochrasmanClient Project ID: Werning 3, 4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

Matrix (check all that apply):

☐ Air☒ Soil/Solid☐ Water☐ Other:

(Describe)

Temp (°C)

3.3

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on ICE
Were all samples received intact ⁽¹⁾ ?	-			
Was adequate sample volume provided ⁽¹⁾ ?	-			
If custody seals are present, are they intact ⁽¹⁾ ?	-			
Are samples with holding times due within 48 hours sample due within 48 hours present?	-			Same day
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	-			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	-			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	-			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	-			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			-	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Custodian Printed Name or Initials

Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS22@8'
2203470-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/22 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0654	03/28/22	03/28/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/22 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0491	123 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0356	89.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0363	90.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/22 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0653	03/28/22	03/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/28/22 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.7	93.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS22@8'
2203470-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/28/22 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0657	03/29/22	04/01/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/28/22 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0223	66.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0196	58.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/28/22 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0200	05/10/22	05/20/22	EPA 6020B	
Barium	13.3	0.400	"	"	"	"	"	"	
Selenium	0.499	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/22 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.1		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/28/22 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS22@8'
2203470-01 (Soil)

Summit Scientific

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS25@2'
2203470-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0654	03/28/22	03/28/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0512	128 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0362	90.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0365	91.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0653	03/28/22	03/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/28/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.8	94.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS25@2'
2203470-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/28/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0657	03/29/22	04/01/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/28/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0184	55.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0146	43.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/28/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.12	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	43.2	0.400	"	"	"	"	"	"	
Selenium	0.627	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.7		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/28/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.57		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS25@2'
2203470-02 (Soil)

Summit Scientific

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS26@5'
2203470-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0654	03/28/22	03/28/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0508	127 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0362	90.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0653	03/28/22	03/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.9	94.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS26@5'
2203470-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0657	03/29/22	04/01/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0200	60.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0145	43.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.19	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	53.4	0.400	"	"	"	"	"	"	
Selenium	0.567	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.1		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.69		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS26@5'
2203470-03 (Soil)

Summit Scientific

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS27@8'
2203470-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/22 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0654	03/28/22	03/28/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/22 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0531	133 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0362	90.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0369	92.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/22 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0653	03/28/22	03/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/28/22 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.2	89.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS27@8'
2203470-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/28/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0657	03/29/22	04/01/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/28/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0199	59.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/28/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.472	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	3.18	0.400	"	"	"	"	"	"	
Selenium	0.280	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.5		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/28/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.66		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS27@8'
2203470-04 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS28@2'
2203470-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/22 14:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0654	03/28/22	03/28/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/22 14:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0517	129 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0358	89.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0369	92.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/22 14:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0653	03/28/22	03/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/28/22 14:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.4	90.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS28@2'
2203470-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/28/22 14:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0657	03/29/22	04/01/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/28/22 14:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0193	58.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0161	48.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/28/22 14:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.472	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	7.65	0.400	"	"	"	"	"	"	
Selenium	0.355	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/22 14:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.8		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/28/22 14:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.74		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS28@2'
2203470-05 (Soil)

Summit Scientific

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS29@5'
2203470-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/22 14:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0654	03/28/22	03/28/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/22 14:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0515	129 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0362	90.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0364	90.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/22 14:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0653	03/28/22	03/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/28/22 14:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.7	93.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS29@5'
2203470-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/28/22 14:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0657	03/29/22	04/01/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/28/22 14:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0168	50.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0137	41.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/28/22 14:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	4.59	0.400	"	"	"	"	"	"	
Selenium	0.275	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/22 14:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.3		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/28/22 14:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	5.27		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS29@5'
2203470-06 (Soil)

Summit Scientific

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS23@2.5'
2203470-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/28/22 10:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0371	0.0100	mg/L	1	BFC0662	03/29/22	04/07/22	EPA 6020B	

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

Date Sampled: **03/28/22 10:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5.71	0.0513	mg/L dry	1	BFD0087	04/05/22	04/08/22	EPA 6020B	
Magnesium	3.45	0.0513	"	"	"	"	"	"	
Sodium	5.72	0.0513	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/28/22 10:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.467	0.00100	units	1	BFD0181	04/09/22	04/09/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/22 10:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.5		%	1	BFC0748	03/31/22	03/31/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/28/22 10:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0633	0.0100	mmhos/cm	1	BFD0107	04/06/22	04/07/22	EPA 120.1	

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS23@2.5'
2203470-07 (Soil)

Summit Scientific

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

Date Sampled: **03/28/22 10:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	6.81			pH Units	1	BFD0108	04/06/22	04/06/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS24@2.5'
2203470-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/28/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0230	0.0100	mg/L	1	BFC0662	03/29/22	04/07/22	EPA 6020B	

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

Date Sampled: **03/28/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8.10	0.0509	mg/L dry	1	BFD0087	04/05/22	04/08/22	EPA 6020B	
Magnesium	4.61	0.0509	"	"	"	"	"	"	
Sodium	4.79	0.0509	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/28/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.333	0.00100	units	1	BFD0181	04/09/22	04/09/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.3		%	1	BFC0748	03/31/22	03/31/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/28/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0664	0.0100	mmhos/cm	1	BFD0107	04/06/22	04/07/22	EPA 120.1	

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

SS24@2.5'
2203470-08 (Soil)

Summit Scientific

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

Date Sampled: **03/28/22 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	6.48			pH Units	1	BFD0108	04/06/22	04/06/22	EPA 9045D	

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0654 - EPA 5030 Soil MS

Blank (BFC0654-BLK1)

Prepared & Analyzed: 03/28/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0543		"	0.0400		136	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0422		"	0.0400		106	50-150			

LCS (BFC0654-BS1)

Prepared & Analyzed: 03/28/22

Benzene	0.0971	0.0020	mg/kg	0.100		97.1	70-130			
Toluene	0.103	0.0050	"	0.100		103	70-130			
Ethylbenzene	0.0906	0.0050	"	0.100		90.6	70-130			
m,p-Xylene	0.188	0.010	"	0.200		94.0	70-130			
o-Xylene	0.0965	0.0050	"	0.100		96.5	70-130			
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100		103	70-130			
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
Naphthalene	0.112	0.0038	"	0.100		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0542		"	0.0400		135	50-150			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0454		"	0.0400		114	50-150			

Matrix Spike (BFC0654-MS1)

Source: 2203462-01

Prepared: 03/28/22 Analyzed: 03/29/22

Benzene	0.0983	0.0020	mg/kg	0.100	ND	98.3	70-130			
Toluene	0.109	0.0050	"	0.100	ND	109	70-130			
Ethylbenzene	0.0939	0.0050	"	0.100	ND	93.9	70-130			
m,p-Xylene	0.192	0.010	"	0.200	ND	96.0	70-130			
o-Xylene	0.0985	0.0050	"	0.100	ND	98.5	70-130			
1,2,4-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130			
Naphthalene	0.126	0.0038	"	0.100	ND	126	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0554		"	0.0400		139	50-150			
Surrogate: Toluene-d8	0.0425		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0453		"	0.0400		113	50-150			

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFC0654 - EPA 5030 Soil MS

Matrix Spike Dup (BFC0654-MSD1)		Source: 2203462-01			Prepared: 03/28/22 Analyzed: 03/29/22					
Benzene	0.0986	0.0020	mg/kg	0.100	ND	98.6	70-130	0.274	30	
Toluene	0.108	0.0050	"	0.100	ND	108	70-130	0.885	30	
Ethylbenzene	0.0974	0.0050	"	0.100	ND	97.4	70-130	3.67	30	
m,p-Xylene	0.202	0.010	"	0.200	ND	101	70-130	4.89	30	
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130	4.73	30	
1,2,4-Trimethylbenzene	0.114	0.0050	"	0.100	ND	114	70-130	5.09	30	
1,3,5-Trimethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	5.23	30	
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130	21.9	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0555		"	0.0400		139	50-150			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0458		"	0.0400		114	50-150			

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFC0653 - EPA 3550A

Blank (BFC0653-BLK1)

Prepared & Analyzed: 03/28/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFC0653-BS1)

Prepared & Analyzed: 03/28/22

C10-C28 (DRO)	487	50	mg/kg	500	97.4	70-130
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Matrix Spike (BFC0653-MS1)

Source: 2203462-01

Prepared & Analyzed: 03/28/22

C10-C28 (DRO)	421	50	mg/kg	500	43.4	75.4	70-130
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Matrix Spike Dup (BFC0653-MSD1)

Source: 2203462-01

Prepared: 03/28/22 Analyzed: 03/29/22

C10-C28 (DRO)	464	50	mg/kg	500	43.4	84.2	70-130	9.93	20
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0657 - EPA 5030 Soil MS

Blank (BFC0657-BLK1)

Prepared: 03/29/22 Analyzed: 03/31/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0193		"	0.0333		58.0	40-150			
Surrogate: Fluoranthene-d10	0.0186		"	0.0333		55.7	40-150			

LCS (BFC0657-BS1)

Prepared: 03/29/22 Analyzed: 03/31/22

Acenaphthene	0.0142	0.00500	mg/kg	0.0333	42.5	31-137
Anthracene	0.0138	0.00500	"	0.0333	41.5	30-120
Benzo (a) anthracene	0.0149	0.00500	"	0.0333	44.8	30-120
Benzo (a) pyrene	0.0146	0.00500	"	0.0333	43.9	30-120
Benzo (b) fluoranthene	0.0144	0.00500	"	0.0333	43.2	30-120
Benzo (k) fluoranthene	0.0154	0.00500	"	0.0333	46.1	30-120
Chrysene	0.0146	0.00500	"	0.0333	43.9	30-120
Dibenz (a,h) anthracene	0.0155	0.00500	"	0.0333	46.6	30-120
Fluoranthene	0.0153	0.00500	"	0.0333	45.8	30-120
Fluorene	0.0146	0.00500	"	0.0333	43.8	30-120
Indeno (1,2,3-cd) pyrene	0.0118	0.00500	"	0.0333	35.4	30-120
Pyrene	0.0149	0.00500	"	0.0333	44.8	35-142
1-Methylnaphthalene	0.0138	0.00500	"	0.0333	41.5	35-142
2-Methylnaphthalene	0.0140	0.00500	"	0.0333	42.0	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0142		"	0.0333	42.7	40-150
Surrogate: Fluoranthene-d10	0.0149		"	0.0333	44.7	40-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0657 - EPA 5030 Soil MS

Matrix Spike (BFC0657-MS1)

Source: 2203283-10

Prepared: 03/29/22 Analyzed: 03/31/22

Acenaphthene	0.0257	0.00500	mg/kg	0.0333	ND	77.0	31-137		
Anthracene	0.0231	0.00500	"	0.0333	ND	69.4	30-120		
Benzo (a) anthracene	0.0202	0.00500	"	0.0333	ND	60.6	30-120		
Benzo (a) pyrene	0.0266	0.00500	"	0.0333	ND	79.7	30-120		
Benzo (b) fluoranthene	0.0247	0.00500	"	0.0333	ND	74.2	30-120		
Benzo (k) fluoranthene	0.0170	0.00500	"	0.0333	ND	50.9	30-120		
Chrysene	0.0228	0.00500	"	0.0333	ND	68.4	30-120		
Dibenz (a,h) anthracene	0.0262	0.00500	"	0.0333	ND	78.5	30-120		
Fluoranthene	0.0171	0.00500	"	0.0333	ND	51.3	30-120		
Fluorene	0.0213	0.00500	"	0.0333	ND	63.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0185	0.00500	"	0.0333	ND	55.5	30-120		
Pyrene	0.0119	0.00500	"	0.0333	ND	35.8	35-142		
1-Methylnaphthalene	0.0212	0.00500	"	0.0333	ND	63.7	15-130		
2-Methylnaphthalene	0.0214	0.00500	"	0.0333	ND	64.2	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0237		"	0.0333		71.2	40-150		
Surrogate: Fluoranthene-d10	0.0181		"	0.0333		54.4	40-150		

Matrix Spike Dup (BFC0657-MSD1)

Source: 2203283-10

Prepared: 03/29/22 Analyzed: 04/01/22

Acenaphthene	0.0201	0.00500	mg/kg	0.0333	ND	60.4	31-137	24.1	30
Anthracene	0.0203	0.00500	"	0.0333	ND	60.8	30-120	13.1	30
Benzo (a) anthracene	0.0236	0.00500	"	0.0333	ND	70.8	30-120	15.4	30
Benzo (a) pyrene	0.0202	0.00500	"	0.0333	ND	60.5	30-120	27.4	30
Benzo (b) fluoranthene	0.0215	0.00500	"	0.0333	ND	64.6	30-120	13.9	30
Benzo (k) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.6	30-120	17.7	30
Chrysene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	14.6	30
Dibenz (a,h) anthracene	0.0201	0.00500	"	0.0333	ND	60.3	30-120	26.2	30
Fluoranthene	0.0150	0.00500	"	0.0333	ND	44.9	30-120	13.4	30
Fluorene	0.0177	0.00500	"	0.0333	ND	53.0	30-120	18.7	30
Indeno (1,2,3-cd) pyrene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	4.70	30
Pyrene	0.0144	0.00500	"	0.0333	ND	43.3	35-142	18.9	30
1-Methylnaphthalene	0.0225	0.00500	"	0.0333	ND	67.4	15-130	5.69	50
2-Methylnaphthalene	0.0223	0.00500	"	0.0333	ND	66.9	15-130	4.20	50
Surrogate: 2-Methylnaphthalene-d10	0.0259		"	0.0333		77.7	40-150		
Surrogate: Fluoranthene-d10	0.0143		"	0.0333		42.8	40-150		

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

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

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

Batch BFC0662 - EPA 3050B

Blank (BFC0662-BLK1)

Prepared: 03/29/22 Analyzed: 04/07/22

Boron ND 0.0100 mg/L

LCS (BFC0662-BS1)

Prepared: 03/29/22 Analyzed: 04/07/22

Boron 5.15 0.0100 mg/L 5.00 103 80-120

Duplicate (BFC0662-DUP1)

Source: 2203354-01

Prepared: 03/29/22 Analyzed: 04/07/22

Boron 0.0448 0.0100 mg/L 0.0467 4.32 20

Matrix Spike (BFC0662-MS1)

Source: 2203354-01

Prepared: 03/29/22 Analyzed: 04/07/22

Boron 5.01 0.0100 mg/L 5.00 0.0467 99.3 75-125

Matrix Spike Dup (BFC0662-MSD1)

Source: 2203354-01

Prepared: 03/29/22 Analyzed: 04/07/22

Boron 4.89 0.0100 mg/L 5.00 0.0467 97.0 75-125 2.40 25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0200 - EPA 3050B

Blank (BFE0200-BLK1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BFE0200-BS1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	35.0	0.200	mg/kg wet	40.0	87.6	80-120
Barium	33.4	0.400	"	40.0	83.6	80-120
Selenium	3.50	0.260	"	4.00	87.6	80-120

Duplicate (BFE0200-DUP1)

Source: 2203470-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg dry	ND		20
Barium	14.1	0.400	"	13.3	6.35	20
Selenium	0.496	0.260	"	0.499	0.631	20

Matrix Spike (BFE0200-MS1)

Source: 2203470-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	41.7	0.200	mg/kg dry	49.9	ND	83.5	75-125
Barium	51.2	0.400	"	49.9	13.3	76.0	75-125
Selenium	4.53	0.260	"	4.99	0.499	80.9	75-125

Matrix Spike Dup (BFE0200-MSD1)

Source: 2203470-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	42.1	0.200	mg/kg dry	49.9	ND	84.3	75-125	0.926	25
Barium	51.8	0.400	"	49.9	13.3	77.1	75-125	1.09	25
Selenium	4.52	0.260	"	4.99	0.499	80.7	75-125	0.222	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

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

Summit Scientific

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

Batch BFD0087 - General Preparation

Blank (BFD0087-BLK1)

Prepared: 04/05/22 Analyzed: 04/08/22

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

LCS (BFD0087-BS1)

Prepared: 04/05/22 Analyzed: 04/08/22

Calcium	5.40	0.0500	mg/L wet	5.00	108	70-130
Magnesium	5.23	0.0500	"	5.00	105	70-130
Sodium	5.16	0.0500	"	5.00	103	70-130

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

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

Summit Scientific

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

Batch BFC0748 - General Preparation

Duplicate (BFC0748-DUP1)

Source: 2203186-01

Prepared & Analyzed: 03/31/22

% Solids	96.8	%		96.8			0.0147	20
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Batch BFE0279 - General Preparation

Duplicate (BFE0279-DUP1)

Source: 2203470-01

Prepared & Analyzed: 05/13/22

% Solids	80.1	%		80.1			0.103	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

05/26/22 08:34

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BFD0107 - General Preparation

Blank (BFD0107-BLK1)

Prepared: 04/06/22 Analyzed: 04/07/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFD0107-BS1)

Prepared: 04/06/22 Analyzed: 04/07/22

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BFD0107-DUP1)

Source: 2203186-01

Prepared: 04/06/22 Analyzed: 04/07/22

Specific Conductance (EC) 0.256 0.0100 mmhos/cm 0.256 0.00 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

05/26/22 08:34

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

Summit Scientific

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

Batch BFD0108 - General Preparation

LCS (BFD0108-BS1)

Prepared & Analyzed: 04/06/22

pH	9.08		pH Units	9.18		98.9	95-105
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Duplicate (BFD0108-DUP1)

Source: 2203186-01

Prepared: 04/06/22 Analyzed: 04/07/22

pH	7.84		pH Units	7.85		0.127	20
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Batch BFE0567 - General Preparation

LCS (BFE0567-BS1)

Prepared & Analyzed: 05/25/22

pH	9.04		pH Units	9.18		98.5	95-105
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Duplicate (BFE0567-DUP1)

Source: 2203470-01

Prepared & Analyzed: 05/25/22

pH	7.92		pH Units	7.97		0.629	20
----	------	--	----------	------	--	-------	----

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 08:34

Notes and Definitions

I-02 This sample was analyzed outside of the recommended holding time.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 26, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2203490

Enclosed are the results of analyses for samples received by Summit Scientific on 03/29/22 13:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS30@2'	2203490-01	Soil	03/29/22 09:00	03/29/22 13:00
SS31@5'	2203490-02	Soil	03/29/22 09:05	03/29/22 13:00
SS32@2'	2203490-03	Soil	03/29/22 10:40	03/29/22 13:00
SS33@5'	2203490-04	Soil	03/29/22 10:45	03/29/22 13:00
SS34@2'	2203490-05	Soil	03/29/22 11:20	03/29/22 13:00
SS35@5'	2203490-06	Soil	03/29/22 11:30	03/29/22 13:00

Summit Scientific

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

Summit Scientific

S₂

2203490

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020


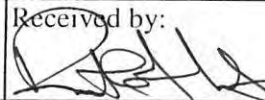
Phone: 303-487-1228

Project Name: Warning 3.4-2 Tank Battery

Sampler Name: Sam Anderson

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR						
1	SS30 e 2'	3/29/22	900	3			X			X				X	X	X							pH, EC, SAR by saturated paste Chrysene, Fluorene, 1-m, 2-m
2	SS31 e 5'		905											X	X	X							
3	SS32 e 2'		1040											X	X	X							
4	SS33 e 5'		1045											X	X	X							
5	SS34 e 2'		1130											X	X	X							
6	SS35 e 5'		1130											X	X	X							
7																							
8																							
9																							
10																							

Relinquished by: 	Date/Time: 1300 3/29/22	Received by: Tasman's Lock Box	Date/Time: 1300 3/29/22	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 32922 1300	Sample Integrity: Temperature Upon Receipt: 3.7	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

Sample Receipt Checklist

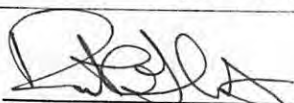
S2 Work Order# 2203490Client: Pbc/Tasman Client Project ID: Werning 3,4-2 Tank Battery

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

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

Matrix (Check all that apply) | Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 3.7Thermometer # 1

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

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


Custodian Printed Name

3.29.22

Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS30@2'
2203490-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/29/22 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0700	03/29/22	03/29/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/29/22 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0486	122 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0359	89.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0355	88.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/29/22 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0701	03/29/22	03/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/29/22 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.4	91.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS30@2'
2203490-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/29/22 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0704	03/30/22	04/06/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/29/22 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0197	59.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0206	61.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/29/22 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.267	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	7.52	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/29/22 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.8		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/29/22 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.36		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS30@2'
2203490-01 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS31@5'
2203490-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/29/22 09:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0700	03/29/22	03/29/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/29/22 09:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0514	129 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0360	90.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0371	92.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/29/22 09:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0701	03/29/22	03/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/29/22 09:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.6	93.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS31@5'
2203490-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/29/22 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0704	03/30/22	04/06/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/29/22 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0199	59.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0193	58.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/29/22 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	3.32	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/29/22 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.6		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/29/22 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.88		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS31@5'
2203490-02 (Soil)

Summit Scientific

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS32@2'
2203490-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/29/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0700	03/29/22	03/29/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/29/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0498	124 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0357	89.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0370	92.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/29/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0701	03/29/22	03/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/29/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.6	92.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS32@2'
2203490-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/29/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0704	03/30/22	04/06/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/29/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0217	65.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0216	64.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/29/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.223	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	9.15	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/29/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.6		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/29/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	5.91		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS32@2'
2203490-03 (Soil)

Summit Scientific

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

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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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS33@5'
2203490-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/29/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0700	03/29/22	03/29/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/29/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0492	123 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0362	90.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0364	91.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/29/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0701	03/29/22	03/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/29/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.8	94.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS33@5'
2203490-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/29/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0704	03/30/22	04/06/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/29/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0200	60.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0173	51.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/29/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.531	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	5.44	0.400	"	"	"	"	"	"	
Selenium	0.490	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/29/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.5		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/29/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	3.07		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS33@5'
2203490-04 (Soil)

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS34@2'
2203490-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/29/22 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0700	03/29/22	03/29/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/29/22 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0494	123 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0362	90.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0371	92.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/29/22 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0701	03/29/22	03/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/29/22 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.5	92.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS34@2'
2203490-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/29/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0704	03/30/22	04/06/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/29/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0209	62.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0190	56.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/29/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.211	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	5.55	0.400	"	"	"	"	"	"	
Selenium	0.283	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/29/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.5		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/29/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.60		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS34@2'
2203490-05 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS35@5'
2203490-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/29/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0700	03/29/22	03/29/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	37	0.50	"	"	"	"	"	"	

Date Sampled: **03/29/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0493	123 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0363	90.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/29/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	150	50	mg/kg	1	BFC0701	03/29/22	03/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/29/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.4	90.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS35@5'
2203490-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/29/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0704	03/30/22	04/06/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/29/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0147	44.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0203	60.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/29/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	6.22	0.400	"	"	"	"	"	"	
Selenium	0.475	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/29/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.6		%	1	BFE0279	05/13/22	05/13/22	Calculation	

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

Date Sampled: **03/29/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	3.16		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

SS35@5'
2203490-06 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0700 - EPA 5030 Soil MS

Blank (BFC0700-BLK1)

Prepared: 03/29/22 Analyzed: 03/30/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0558		"	0.0400		140	50-150			
Surrogate: Toluene-d8	0.0423		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0439		"	0.0400		110	50-150			

LCS (BFC0700-BS1)

Prepared: 03/29/22 Analyzed: 03/30/22

Benzene	0.0962	0.0020	mg/kg	0.100		96.2	70-130			
Toluene	0.101	0.0050	"	0.100		101	70-130			
Ethylbenzene	0.0908	0.0050	"	0.100		90.8	70-130			
m,p-Xylene	0.187	0.010	"	0.200		93.5	70-130			
o-Xylene	0.0964	0.0050	"	0.100		96.4	70-130			
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100		103	70-130			
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
Naphthalene	0.118	0.0038	"	0.100		118	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0521		"	0.0400		130	50-150			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0458		"	0.0400		114	50-150			

Matrix Spike (BFC0700-MS1)

Source: 2203488-01

Prepared: 03/29/22 Analyzed: 03/30/22

Benzene	0.0952	0.0020	mg/kg	0.100	ND	95.2	70-130			
Toluene	0.104	0.0050	"	0.100	ND	104	70-130			
Ethylbenzene	0.0918	0.0050	"	0.100	ND	91.8	70-130			
m,p-Xylene	0.190	0.010	"	0.200	ND	95.0	70-130			
o-Xylene	0.0971	0.0050	"	0.100	ND	97.1	70-130			
1,2,4-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130			
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0560		"	0.0400		140	50-150			
Surrogate: Toluene-d8	0.0425		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0462		"	0.0400		115	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFC0700 - EPA 5030 Soil MS

Matrix Spike Dup (BFC0700-MSD1)		Source: 2203488-01			Prepared: 03/29/22 Analyzed: 03/30/22					
Benzene	0.0942	0.0020	mg/kg	0.100	ND	94.2	70-130	1.05	30	
Toluene	0.103	0.0050	"	0.100	ND	103	70-130	1.42	30	
Ethylbenzene	0.0926	0.0050	"	0.100	ND	92.6	70-130	0.911	30	
m,p-Xylene	0.192	0.010	"	0.200	ND	95.8	70-130	0.818	30	
o-Xylene	0.0968	0.0050	"	0.100	ND	96.8	70-130	0.278	30	
1,2,4-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	0.862	30	
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	0.634	30	
Naphthalene	0.0988	0.0038	"	0.100	ND	98.8	70-130	2.01	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0557		"	0.0400		139	50-150			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0453		"	0.0400		113	50-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFC0701 - EPA 3550A

Blank (BFC0701-BLK1)

Prepared: 03/29/22 Analyzed: 03/30/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFC0701-BS1)

Prepared: 03/29/22 Analyzed: 03/30/22

C10-C28 (DRO)	505	50	mg/kg	500	101	70-130
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Matrix Spike (BFC0701-MS1)

Source: 2203488-01

Prepared: 03/29/22 Analyzed: 03/30/22

C10-C28 (DRO)	426	50	mg/kg	500	25.4	80.1	70-130
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Matrix Spike Dup (BFC0701-MSD1)

Source: 2203488-01

Prepared: 03/29/22 Analyzed: 03/30/22

C10-C28 (DRO)	473	50	mg/kg	500	25.4	89.5	70-130	10.4	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0704 - EPA 5030 Soil MS

Blank (BFC0704-BLK1)

Prepared: 03/30/22 Analyzed: 04/05/22

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0211		"	0.0333		63.2		40-150			
Surrogate: Fluoranthene-d10	0.0217		"	0.0333		65.0		40-150			

LCS (BFC0704-BS1)

Prepared: 03/30/22 Analyzed: 04/06/22

Acenaphthene	0.0274	0.00500	mg/kg	0.0333		82.3		31-137			
Anthracene	0.0282	0.00500	"	0.0333		84.6		30-120			
Benzo (a) anthracene	0.0306	0.00500	"	0.0333		91.7		30-120			
Benzo (a) pyrene	0.0294	0.00500	"	0.0333		88.1		30-120			
Benzo (b) fluoranthene	0.0329	0.00500	"	0.0333		98.7		30-120			
Benzo (k) fluoranthene	0.0365	0.00500	"	0.0333		110		30-120			
Chrysene	0.0320	0.00500	"	0.0333		96.0		30-120			
Dibenz (a,h) anthracene	0.0214	0.00500	"	0.0333		64.3		30-120			
Fluoranthene	0.0284	0.00500	"	0.0333		85.1		30-120			
Fluorene	0.0284	0.00500	"	0.0333		85.2		30-120			
Indeno (1,2,3-cd) pyrene	0.0251	0.00500	"	0.0333		75.4		30-120			
Pyrene	0.0342	0.00500	"	0.0333		103		35-142			
1-Methylnaphthalene	0.0277	0.00500	"	0.0333		83.1		35-142			
2-Methylnaphthalene	0.0284	0.00500	"	0.0333		85.2		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0274		"	0.0333		82.3		40-150			
Surrogate: Fluoranthene-d10	0.0294		"	0.0333		88.3		40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0704 - EPA 5030 Soil MS

Matrix Spike (BFC0704-MS1)

Source: 2203457-01

Prepared: 03/30/22 Analyzed: 04/06/22

Acenaphthene	0.0226	0.00500	mg/kg	0.0333	ND	67.9	31-137		
Anthracene	0.0235	0.00500	"	0.0333	ND	70.4	30-120		
Benzo (a) anthracene	0.0262	0.00500	"	0.0333	ND	78.6	30-120		
Benzo (a) pyrene	0.0261	0.00500	"	0.0333	ND	78.3	30-120		
Benzo (b) fluoranthene	0.0286	0.00500	"	0.0333	ND	85.9	30-120		
Benzo (k) fluoranthene	0.0330	0.00500	"	0.0333	ND	99.1	30-120		
Chrysene	0.0276	0.00500	"	0.0333	ND	82.7	30-120		
Dibenz (a,h) anthracene	0.0191	0.00500	"	0.0333	ND	57.3	30-120		
Fluoranthene	0.0253	0.00500	"	0.0333	ND	75.8	30-120		
Fluorene	0.0220	0.00500	"	0.0333	ND	65.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0220	0.00500	"	0.0333	ND	65.9	30-120		
Pyrene	0.0305	0.00500	"	0.0333	ND	91.6	35-142		
1-Methylnaphthalene	0.0254	0.00500	"	0.0333	ND	76.1	15-130		
2-Methylnaphthalene	0.0266	0.00500	"	0.0333	ND	79.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0247		"	0.0333		74.0	40-150		
Surrogate: Fluoranthene-d10	0.0248		"	0.0333		74.4	40-150		

Matrix Spike Dup (BFC0704-MSD1)

Source: 2203457-01

Prepared: 03/30/22 Analyzed: 04/06/22

Acenaphthene	0.0231	0.00500	mg/kg	0.0333	ND	69.3	31-137	2.14	30
Anthracene	0.0222	0.00500	"	0.0333	ND	66.6	30-120	5.58	30
Benzo (a) anthracene	0.0258	0.00500	"	0.0333	ND	77.4	30-120	1.58	30
Benzo (a) pyrene	0.0248	0.00500	"	0.0333	ND	74.4	30-120	5.02	30
Benzo (b) fluoranthene	0.0270	0.00500	"	0.0333	ND	81.0	30-120	5.91	30
Benzo (k) fluoranthene	0.0331	0.00500	"	0.0333	ND	99.4	30-120	0.334	30
Chrysene	0.0283	0.00500	"	0.0333	ND	84.8	30-120	2.48	30
Dibenz (a,h) anthracene	0.0207	0.00500	"	0.0333	ND	62.1	30-120	8.15	30
Fluoranthene	0.0226	0.00500	"	0.0333	ND	67.7	30-120	11.2	30
Fluorene	0.0232	0.00500	"	0.0333	ND	69.7	30-120	5.61	30
Indeno (1,2,3-cd) pyrene	0.0227	0.00500	"	0.0333	ND	68.0	30-120	3.22	30
Pyrene	0.0300	0.00500	"	0.0333	ND	89.9	35-142	1.92	30
1-Methylnaphthalene	0.0241	0.00500	"	0.0333	ND	72.3	15-130	5.08	50
2-Methylnaphthalene	0.0220	0.00500	"	0.0333	ND	66.1	15-130	18.9	50
Surrogate: 2-Methylnaphthalene-d10	0.0222		"	0.0333		66.5	40-150		
Surrogate: Fluoranthene-d10	0.0240		"	0.0333		71.9	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0200 - EPA 3050B

Blank (BFE0200-BLK1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BFE0200-BS1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	35.0	0.200	mg/kg wet	40.0	87.6	80-120
Barium	33.4	0.400	"	40.0	83.6	80-120
Selenium	3.50	0.260	"	4.00	87.6	80-120

Duplicate (BFE0200-DUP1)

Source: 2203470-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg dry	ND		20
Barium	14.1	0.400	"	13.3	6.35	20
Selenium	0.496	0.260	"	0.499	0.631	20

Matrix Spike (BFE0200-MS1)

Source: 2203470-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	41.7	0.200	mg/kg dry	49.9	ND	83.5	75-125
Barium	51.2	0.400	"	49.9	13.3	76.0	75-125
Selenium	4.53	0.260	"	4.99	0.499	80.9	75-125

Matrix Spike Dup (BFE0200-MSD1)

Source: 2203470-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	42.1	0.200	mg/kg dry	49.9	ND	84.3	75-125	0.926	25
Barium	51.8	0.400	"	49.9	13.3	77.1	75-125	1.09	25
Selenium	4.52	0.260	"	4.99	0.499	80.7	75-125	0.222	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

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

Summit Scientific

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

Batch BFE0279 - General Preparation

Duplicate (BFE0279-DUP1)

Source: 2203470-01

Prepared & Analyzed: 05/13/22

% Solids	80.1	%	80.1	0.103	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

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

Summit Scientific

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

Batch BFE0567 - General Preparation

LCS (BFE0567-BS1)

Prepared & Analyzed: 05/25/22

pH	9.04	pH Units	9.18	98.5	95-105
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Duplicate (BFE0567-DUP1)

Source: 2203470-01

Prepared & Analyzed: 05/25/22

pH	7.92	pH Units	7.97	0.629	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:44

Notes and Definitions

I-02 This sample was analyzed outside of the recommended holding time.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 26, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2203541

Enclosed are the results of analyses for samples received by Summit Scientific on 03/31/22 17:07. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Muri Premier
Project Manager



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS36@8'	2203541-01	Soil	03/31/22 08:25	03/31/22 17:07
SS37@8'	2203541-02	Soil	03/31/22 08:30	03/31/22 17:07
SS38@8'	2203541-03	Soil	03/31/22 12:25	03/31/22 17:07
SS39@2'	2203541-04	Soil	03/31/22 13:30	03/31/22 17:07
SS40@5'	2203541-05	Soil	03/31/22 14:00	03/31/22 17:07
SS41@2'	2203541-06	Soil	03/31/22 15:30	03/31/22 17:07
SS42@5'	2203541-07	Soil	03/31/22 15:35	03/31/22 17:07

Summit Scientific

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

Summit Scientific

S₂

220354)

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020

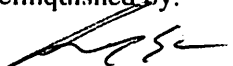
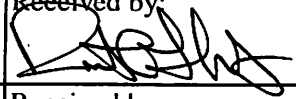
Phone: 303-487-1228

Project Name: Werning 3, 4-2 Tank Battery

Sampler Name: Sam Anderson

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR				
1	SS36 e 8'	3/31/22	825	3			X			X				X	X	X				X	pH, EC, SAR by saturated paste Chrysene, Fluorene, 1-m, 2-m
2	SS37 e 8'		830	3										X	X	X				X	
3	SS36 e 8'		1225	3										X	X	X				X	
4	SS39 e 2'		1330	3										X	X	X				X	
5	SS40 e 5'		1400	3										X	X	X				X	
6	SS41 e 2'		1530	3										X	X	X				X	
7	SS42 e 5'		1535	3										X	X	X				X	
8																					
9																					
10																					

Relinquished by: 	Date/Time: 1630 3/31/22	Received by: Tasman's Lock Box	Date/Time: 1630 3/31/22	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours 48 hours	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 33122 1707	Received by: 	Date/Time: 33122 1707	Sample Integrity: Temperature Upon Receipt: 4.6	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes No	

S₂

Sample Receipt Checklist

S2 Work Order# 2203541


Client: Pocahontas Client Project ID: Warning 3,4-2 Tank Battery

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

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

Matrix (Check all that apply) ☐ Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 4.60 Thermometer # 1

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

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

 Custodian Printed Name

3.31.22
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS36@8'
2203541-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0758	03/31/22	03/31/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/31/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0410	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0357	89.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0358	89.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0757	03/31/22	03/31/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.7	93.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS36@8'
2203541-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0001	04/01/22	04/02/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/31/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0309	92.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0255	76.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/31/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	12.5	0.400	"	"	"	"	"	"	
Selenium	0.291	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.9		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **03/31/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.18		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS36@8'
2203541-01 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS37@8'
2203541-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 08:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0758	03/31/22	03/31/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/31/22 08:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0398	99.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0361	90.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0357	89.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 08:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0757	03/31/22	03/31/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 08:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.5	92.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS37@8'
2203541-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 08:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0001	04/01/22	04/02/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/31/22 08:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0278	83.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0233	69.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/31/22 08:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	21.1	0.400	"	"	"	"	"	"	
Selenium	0.287	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 08:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	76.1		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **03/31/22 08:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.21		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS37@8'
2203541-02 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS38@8'
2203541-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0758	03/31/22	03/31/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/31/22 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0419	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0362	90.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0358	89.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0757	03/31/22	03/31/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.9	95.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS38@8'
2203541-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0001	04/01/22	04/02/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/31/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0281	84.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0239	71.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/31/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	6.62	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.2		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **03/31/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS38@8'
2203541-03 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS39@2'
2203541-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0758	03/31/22	03/31/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/31/22 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0411	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0362	90.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0355	88.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0757	03/31/22	04/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.4	91.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS39@2'
2203541-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0001	04/01/22	04/02/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/31/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0254	76.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0214	64.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/31/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.262	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	8.20	0.400	"	"	"	"	"	"	
Selenium	0.283	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.7		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **03/31/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.65		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS39@2'
2203541-04 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS40@5'
2203541-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0758	03/31/22	03/31/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/31/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0415	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0364	91.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0352	88.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0757	03/31/22	04/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.2	89.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS40@5'
2203541-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0001	04/01/22	04/02/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/31/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0250	75.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0201	60.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/31/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.519	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	35.8	0.400	"	"	"	"	"	"	
Selenium	0.453	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.8		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **03/31/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.91		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS40@5'
2203541-05 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS41@2'
2203541-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 15:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0758	03/31/22	03/31/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/31/22 15:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0411	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0361	90.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0360	90.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 15:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0757	03/31/22	04/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 15:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.3	90.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS41@2'
2203541-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0001	04/01/22	04/02/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/31/22 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0228	68.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0194	58.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/31/22 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	8.89	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.9		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **03/31/22 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.36		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS41@2'
2203541-06 (Soil)

Summit Scientific

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS42@5'
2203541-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 15:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0758	03/31/22	03/31/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/31/22 15:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0418	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0363	90.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0359	89.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 15:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0757	03/31/22	04/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 15:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.5	92.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS42@5'
2203541-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0001	04/01/22	04/02/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/31/22 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0203	61.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0181	54.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/31/22 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.472	0.200	mg/kg dry	1	BFE0200	05/10/22	05/21/22	EPA 6020B	
Barium	63.6	0.400	"	"	"	"	"	"	
Selenium	0.895	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.9		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **03/31/22 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.32		pH Units	1	BFE0567	05/25/22	05/25/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

SS42@5'
2203541-07 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0758 - EPA 5030 Soil MS

Blank (BFC0758-BLK1)

Prepared: 03/31/22 Analyzed: 04/01/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0537		"	0.0400		134	50-150			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400		106	50-150			

LCS (BFC0758-BS1)

Prepared: 03/31/22 Analyzed: 04/01/22

Benzene	0.0956	0.0020	mg/kg	0.100		95.6	70-130			
Toluene	0.102	0.0050	"	0.100		102	70-130			
Ethylbenzene	0.0899	0.0050	"	0.100		89.9	70-130			
m,p-Xylene	0.187	0.010	"	0.200		93.4	70-130			
o-Xylene	0.0950	0.0050	"	0.100		95.0	70-130			
1,2,4-Trimethylbenzene	0.104	0.0050	"	0.100		104	70-130			
1,3,5-Trimethylbenzene	0.0992	0.0050	"	0.100		99.2	70-130			
Naphthalene	0.114	0.0038	"	0.100		114	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0512		"	0.0400		128	50-150			
Surrogate: Toluene-d8	0.0419		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0446		"	0.0400		112	50-150			

Matrix Spike (BFC0758-MS1)

Source: 2203537-01

Prepared: 03/31/22 Analyzed: 04/01/22

Benzene	0.0980	0.0020	mg/kg	0.100	0.00747	90.5	70-130			
Toluene	0.105	0.0050	"	0.100	ND	105	70-130			
Ethylbenzene	0.0914	0.0050	"	0.100	0.0666	24.8	70-130			QM-07
m,p-Xylene	0.192	0.010	"	0.200	0.0298	81.2	70-130			
o-Xylene	0.0970	0.0050	"	0.100	ND	97.0	70-130			
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100	0.0612	47.9	70-130			QM-07
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100	0.0107	92.0	70-130			
Naphthalene	0.129	0.0038	"	0.100	0.0178	112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0540		"	0.0400		135	50-150			
Surrogate: Toluene-d8	0.0419		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0447		"	0.0400		112	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFC0758 - EPA 5030 Soil MS

Matrix Spike Dup (BFC0758-MSD1)		Source: 2203537-01			Prepared: 03/31/22 Analyzed: 04/01/22					
Benzene	0.0945	0.0020	mg/kg	0.100	0.00747	87.0	70-130	3.59	30	
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	1.06	30	
Ethylbenzene	0.0940	0.0050	"	0.100	0.0666	27.4	70-130	2.82	30	QM-07
m,p-Xylene	0.193	0.010	"	0.200	0.0298	81.7	70-130	0.592	30	
o-Xylene	0.0968	0.0050	"	0.100	ND	96.8	70-130	0.279	30	
1,2,4-Trimethylbenzene	0.107	0.0050	"	0.100	0.0612	46.0	70-130	1.78	30	QM-07
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	0.0107	93.0	70-130	1.05	30	
Naphthalene	0.132	0.0038	"	0.100	0.0178	114	70-130	1.59	30	
Surrogate: 1,2-Dichloroethane-d4		0.0508	"	0.0400		127	50-150			
Surrogate: Toluene-d8		0.0410	"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene		0.0440	"	0.0400		110	50-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFC0757 - EPA 3550A

Blank (BFC0757-BLK1)

Prepared: 03/31/22 Analyzed: 04/01/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFC0757-BS1)

Prepared: 03/31/22 Analyzed: 04/01/22

C10-C28 (DRO)	450	50	mg/kg	500	89.9	70-130
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Matrix Spike (BFC0757-MS1)

Source: 2203537-01

Prepared: 03/31/22 Analyzed: 04/01/22

C10-C28 (DRO)	566	50	mg/kg	500	130	87.3	70-130
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Matrix Spike Dup (BFC0757-MSD1)

Source: 2203537-01

Prepared: 03/31/22 Analyzed: 04/01/22

C10-C28 (DRO)	502	50	mg/kg	500	130	74.3	70-130	12.1	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0001 - EPA 5030 Soil MS

Blank (BFD0001-BLK1)

Prepared: 04/01/22 Analyzed: 04/02/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0288		"	0.0333		86.4	40-150			
Surrogate: Fluoranthene-d10	0.0224		"	0.0333		67.1	40-150			

LCS (BFD0001-BS1)

Prepared: 04/01/22 Analyzed: 04/02/22

Acenaphthene	0.0247	0.00500	mg/kg	0.0333		74.1	31-137			
Anthracene	0.0242	0.00500	"	0.0333		72.7	30-120			
Benzo (a) anthracene	0.0203	0.00500	"	0.0333		60.9	30-120			
Benzo (a) pyrene	0.0213	0.00500	"	0.0333		63.9	30-120			
Benzo (b) fluoranthene	0.0286	0.00500	"	0.0333		85.7	30-120			
Benzo (k) fluoranthene	0.0226	0.00500	"	0.0333		67.7	30-120			
Chrysene	0.0172	0.00500	"	0.0333		51.7	30-120			
Dibenz (a,h) anthracene	0.0260	0.00500	"	0.0333		77.9	30-120			
Fluoranthene	0.0232	0.00500	"	0.0333		69.5	30-120			
Fluorene	0.0237	0.00500	"	0.0333		71.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0138	0.00500	"	0.0333		41.3	30-120			
Pyrene	0.0205	0.00500	"	0.0333		61.5	35-142			
1-Methylnaphthalene	0.0302	0.00500	"	0.0333		90.7	35-142			
2-Methylnaphthalene	0.0292	0.00500	"	0.0333		87.6	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0165		"	0.0333		49.6	40-150			
Surrogate: Fluoranthene-d10	0.0196		"	0.0333		58.8	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0001 - EPA 5030 Soil MS

Matrix Spike (BFD0001-MS1)

Source: 2203186-01

Prepared: 04/01/22 Analyzed: 04/02/22

Acenaphthene	0.0178	0.00500	mg/kg	0.0333	ND	53.3	31-137		
Anthracene	0.0181	0.00500	"	0.0333	ND	54.3	30-120		
Benzo (a) anthracene	0.0187	0.00500	"	0.0333	ND	56.1	30-120		
Benzo (a) pyrene	0.0219	0.00500	"	0.0333	ND	65.8	30-120		
Benzo (b) fluoranthene	0.0228	0.00500	"	0.0333	ND	68.4	30-120		
Benzo (k) fluoranthene	0.0243	0.00500	"	0.0333	ND	72.9	30-120		
Chrysene	0.0188	0.00500	"	0.0333	ND	56.4	30-120		
Dibenz (a,h) anthracene	0.0183	0.00500	"	0.0333	ND	55.0	30-120		
Fluoranthene	0.0206	0.00500	"	0.0333	ND	61.9	30-120		
Fluorene	0.0170	0.00500	"	0.0333	ND	50.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0120	0.00500	"	0.0333	ND	36.1	30-120		
Pyrene	0.0191	0.00500	"	0.0333	ND	57.4	35-142		
1-Methylnaphthalene	0.0239	0.00500	"	0.0333	ND	71.8	15-130		
2-Methylnaphthalene	0.0195	0.00500	"	0.0333	ND	58.4	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0225		"	0.0333		67.4	40-150		
Surrogate: Fluoranthene-d10	0.0208		"	0.0333		62.5	40-150		

Matrix Spike Dup (BFD0001-MSD1)

Source: 2203186-01

Prepared: 04/01/22 Analyzed: 04/02/22

Acenaphthene	0.0205	0.00500	mg/kg	0.0333	ND	61.4	31-137	14.2	30
Anthracene	0.0192	0.00500	"	0.0333	ND	57.6	30-120	6.02	30
Benzo (a) anthracene	0.0195	0.00500	"	0.0333	ND	58.5	30-120	4.11	30
Benzo (a) pyrene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	5.40	30
Benzo (b) fluoranthene	0.0245	0.00500	"	0.0333	ND	73.4	30-120	6.99	30
Benzo (k) fluoranthene	0.0259	0.00500	"	0.0333	ND	77.8	30-120	6.47	30
Chrysene	0.0199	0.00500	"	0.0333	ND	59.8	30-120	5.90	30
Dibenz (a,h) anthracene	0.0172	0.00500	"	0.0333	ND	51.6	30-120	6.39	30
Fluoranthene	0.0216	0.00500	"	0.0333	ND	64.8	30-120	4.61	30
Fluorene	0.0192	0.00500	"	0.0333	ND	57.5	30-120	12.2	30
Indeno (1,2,3-cd) pyrene	0.0110	0.00500	"	0.0333	ND	33.1	30-120	8.85	30
Pyrene	0.0197	0.00500	"	0.0333	ND	59.2	35-142	2.99	30
1-Methylnaphthalene	0.0279	0.00500	"	0.0333	ND	83.8	15-130	15.5	50
2-Methylnaphthalene	0.0199	0.00500	"	0.0333	ND	59.7	15-130	2.34	50
Surrogate: 2-Methylnaphthalene-d10	0.0256		"	0.0333		76.8	40-150		
Surrogate: Fluoranthene-d10	0.0217		"	0.0333		65.2	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0200 - EPA 3050B

Blank (BFE0200-BLK1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BFE0200-BS1)

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	35.0	0.200	mg/kg wet	40.0	87.6	80-120
Barium	33.4	0.400	"	40.0	83.6	80-120
Selenium	3.50	0.260	"	4.00	87.6	80-120

Duplicate (BFE0200-DUP1)

Source: 2203470-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	ND	0.200	mg/kg dry	ND		20
Barium	14.1	0.400	"	13.3	6.35	20
Selenium	0.496	0.260	"	0.499	0.631	20

Matrix Spike (BFE0200-MS1)

Source: 2203470-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	41.7	0.200	mg/kg dry	49.9	ND	83.5	75-125
Barium	51.2	0.400	"	49.9	13.3	76.0	75-125
Selenium	4.53	0.260	"	4.99	0.499	80.9	75-125

Matrix Spike Dup (BFE0200-MSD1)

Source: 2203470-01

Prepared: 05/10/22 Analyzed: 05/20/22

Arsenic	42.1	0.200	mg/kg dry	49.9	ND	84.3	75-125	0.926	25
Barium	51.8	0.400	"	49.9	13.3	77.1	75-125	1.09	25
Selenium	4.52	0.260	"	4.99	0.499	80.7	75-125	0.222	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

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

Summit Scientific

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

Batch BFE0248 - General Preparation

Duplicate (BFE0248-DUP1)

Source: 2203541-01

Prepared & Analyzed: 05/12/22

% Solids	79.5	%	77.9	2.07	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFE0567 - General Preparation

LCS (BFE0567-BS1)

Prepared & Analyzed: 05/25/22

pH	9.04	pH Units	9.18	98.5	95-105
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Duplicate (BFE0567-DUP1)

Source: 2203470-01

Prepared & Analyzed: 05/25/22

pH	7.92	pH Units	7.97	0.629	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/26/22 10:47

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
I-02	This sample was analyzed outside of the recommended holding time.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 31, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2204005

Enclosed are the results of analyses for samples received by Summit Scientific on 04/01/22 17:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS43@8'	2204005-01	Soil	04/01/22 08:20	04/01/22 17:50
SS44@8'	2204005-02	Soil	04/01/22 09:53	04/01/22 17:50
SS45@8'	2204005-03	Soil	04/01/22 11:23	04/01/22 17:50

Summit Scientific

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Summit Scientific

S₂

2004005

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020

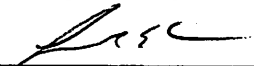
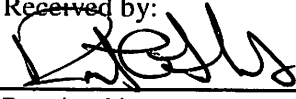
Phone: 303-487-1228

Project Name: Warning 3, 4-2 Tank Battery

Sampler Name: Sam Anderson

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR			
1	SS43 e 8'	4/1/22	820	3			X			X				X	X	X				pH, EC, SAR by saturated paste
2	SS44 e 8'		953											X	X	X				Chrysene, Fluorene, 1-m, 2-m
3	SS45 e 8'		1123											X	X	X				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: 	Date/Time: 4/1/22	Received by: Tasman's Lock Box	Date/Time: 4/1/22	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4/22 1750	Received by: 	Date/Time: 4/22 1750	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 6.3 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	



Sample Receipt Checklist

S2 Work Order# 2004/005Client: Boc/Asman Client Project ID: Warning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)Temp (°C) 6.3

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On Ice
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.[Signature]
Custodian Printed Name or Initials4.12.2
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

SS43@8'
2204005-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/01/22 08:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0033	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/01/22 08:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		137 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/01/22 08:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0034	04/01/22	04/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/01/22 08:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		97.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

SS43@8'
2204005-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/01/22 08:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0045	04/04/22	04/05/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/01/22 08:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		59.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/01/22 08:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	11.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/01/22 08:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.6		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **04/01/22 08:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.46		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

SS43@8'
2204005-01 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

SS44@8'
2204005-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/01/22 09:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0033	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/01/22 09:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		138 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/01/22 09:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0034	04/01/22	04/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/01/22 09:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		97.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

SS44@8'
2204005-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/01/22 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0045	04/04/22	04/05/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/01/22 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		75.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/01/22 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	55.0	0.400	"	"	"	"	"	"	
Selenium	0.584	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/01/22 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.0		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **04/01/22 09:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.32		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

SS44@8'
2204005-02 (Soil)

Summit Scientific

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

SS45@8'
2204005-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/01/22 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0033	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/01/22 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		131 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/01/22 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0034	04/01/22	04/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/01/22 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		92.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

SS45@8'
2204005-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/01/22 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0045	04/04/22	04/05/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/01/22 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/01/22 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.527	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	83.8	0.400	"	"	"	"	"	"	
Selenium	0.828	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/01/22 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.7		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **04/01/22 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

SS45@8'
2204005-03 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFD0033 - EPA 5030 Soil MS

Blank (BFD0033-BLK1)

Prepared & Analyzed: 04/01/22

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0516		"	0.0400		129	50-150				
Surrogate: Toluene-d8	0.0406		"	0.0400		101	50-150				
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107	50-150				

LCS (BFD0033-BS1)

Prepared & Analyzed: 04/01/22

Benzene	0.0913	0.0020	mg/kg	0.100		91.3	70-130				
Toluene	0.0999	0.0050	"	0.100		99.9	70-130				
Ethylbenzene	0.0924	0.0050	"	0.100		92.4	70-130				
m,p-Xylene	0.191	0.010	"	0.200		95.5	70-130				
o-Xylene	0.0968	0.0050	"	0.100		96.8	70-130				
1,2,4-Trimethylbenzene	0.105	0.0050	"	0.100		105	70-130				
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130				
Naphthalene	0.101	0.0038	"	0.100		101	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0505		"	0.0400		126	50-150				
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150				
Surrogate: 4-Bromofluorobenzene	0.0436		"	0.0400		109	50-150				

Matrix Spike (BFD0033-MS1)

Source: 2204001-01

Prepared & Analyzed: 04/01/22

Benzene	0.0932	0.0020	mg/kg	0.100	ND	93.2	70-130				
Toluene	0.103	0.0050	"	0.100	ND	103	70-130				
Ethylbenzene	0.0922	0.0050	"	0.100	ND	92.2	70-130				
m,p-Xylene	0.197	0.010	"	0.200	0.00327	96.8	70-130				
o-Xylene	0.0997	0.0050	"	0.100	ND	99.7	70-130				
1,2,4-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130				
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130				
Naphthalene	0.122	0.0038	"	0.100	ND	122	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0551		"	0.0400		138	50-150				
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150				
Surrogate: 4-Bromofluorobenzene	0.0430		"	0.0400		107	50-150				

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFD0033 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0033-MSD1)		Source: 2204001-01			Prepared & Analyzed: 04/01/22					
Benzene	0.0953	0.0020	mg/kg	0.100	ND	95.3	70-130	2.29	30	
Toluene	0.106	0.0050	"	0.100	ND	106	70-130	2.46	30	
Ethylbenzene	0.0934	0.0050	"	0.100	ND	93.4	70-130	1.29	30	
m,p-Xylene	0.193	0.010	"	0.200	0.00327	94.8	70-130	2.11	30	
o-Xylene	0.0996	0.0050	"	0.100	ND	99.6	70-130	0.0903	30	
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	3.34	30	
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	2.13	30	
Naphthalene	0.120	0.0038	"	0.100	ND	120	70-130	1.68	30	
Surrogate: 1,2-Dichloroethane-d4		0.0533	"	0.0400		133	50-150			
Surrogate: Toluene-d8		0.0416	"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene		0.0440	"	0.0400		110	50-150			

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFD0034 - EPA 3550A

Blank (BFD0034-BLK1)

Prepared: 04/01/22 Analyzed: 04/02/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFD0034-BS1)

Prepared: 04/01/22 Analyzed: 04/02/22

C10-C28 (DRO)	497	50	mg/kg	500	99.3	70-130
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Matrix Spike (BFD0034-MS1)

Source: 2204001-01

Prepared: 04/01/22 Analyzed: 04/02/22

C10-C28 (DRO)	446	50	mg/kg	500	11.2	87.0	70-130
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Matrix Spike Dup (BFD0034-MSD1)

Source: 2204001-01

Prepared: 04/01/22 Analyzed: 04/02/22

C10-C28 (DRO)	463	50	mg/kg	500	11.2	90.4	70-130	3.78	20
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0045 - EPA 5030 Soil MS

Blank (BFD0045-BLK1)

Prepared & Analyzed: 04/04/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0224		"	0.0333		67.3	40-150			
Surrogate: Fluoranthene-d10	0.0195		"	0.0333		58.4	40-150			

LCS (BFD0045-BS1)

Prepared & Analyzed: 04/04/22

Acenaphthene	0.0213	0.00500	mg/kg	0.0333		64.0	31-137			
Anthracene	0.0218	0.00500	"	0.0333		65.3	30-120			
Benzo (a) anthracene	0.0213	0.00500	"	0.0333		63.9	30-120			
Benzo (a) pyrene	0.0246	0.00500	"	0.0333		73.7	30-120			
Benzo (b) fluoranthene	0.0245	0.00500	"	0.0333		73.4	30-120			
Benzo (k) fluoranthene	0.0270	0.00500	"	0.0333		81.1	30-120			
Chrysene	0.0223	0.00500	"	0.0333		66.8	30-120			
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333		66.3	30-120			
Fluoranthene	0.0241	0.00500	"	0.0333		72.2	30-120			
Fluorene	0.0207	0.00500	"	0.0333		62.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0145	0.00500	"	0.0333		43.5	30-120			
Pyrene	0.0210	0.00500	"	0.0333		63.1	35-142			
1-Methylnaphthalene	0.0269	0.00500	"	0.0333		80.8	35-142			
2-Methylnaphthalene	0.0226	0.00500	"	0.0333		67.8	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0281		"	0.0333		84.3	40-150			
Surrogate: Fluoranthene-d10	0.0242		"	0.0333		72.5	40-150			

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0045 - EPA 5030 Soil MS

Matrix Spike (BFD0045-MS1)

Source: 2203554-01

Prepared & Analyzed: 04/04/22

Acenaphthene	0.0218	0.00500	mg/kg	0.0333	ND	65.4	31-137		
Anthracene	0.0206	0.00500	"	0.0333	ND	61.9	30-120		
Benzo (a) anthracene	0.0205	0.00500	"	0.0333	ND	61.4	30-120		
Benzo (a) pyrene	0.0240	0.00500	"	0.0333	ND	72.0	30-120		
Benzo (b) fluoranthene	0.0250	0.00500	"	0.0333	ND	75.0	30-120		
Benzo (k) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.5	30-120		
Chrysene	0.0215	0.00500	"	0.0333	ND	64.5	30-120		
Dibenz (a,h) anthracene	0.0178	0.00500	"	0.0333	ND	53.4	30-120		
Fluoranthene	0.0246	0.00500	"	0.0333	ND	73.7	30-120		
Fluorene	0.0211	0.00500	"	0.0333	ND	63.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0118	0.00500	"	0.0333	ND	35.5	30-120		
Pyrene	0.0204	0.00500	"	0.0333	ND	61.2	35-142		
1-Methylnaphthalene	0.0303	0.00500	"	0.0333	ND	90.9	15-130		
2-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.2	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0295		"	0.0333		88.4	40-150		
Surrogate: Fluoranthene-d10	0.0245		"	0.0333		73.4	40-150		

Matrix Spike Dup (BFD0045-MSD1)

Source: 2203554-01

Prepared & Analyzed: 04/04/22

Acenaphthene	0.0204	0.00500	mg/kg	0.0333	ND	61.3	31-137	6.47	30
Anthracene	0.0195	0.00500	"	0.0333	ND	58.4	30-120	5.88	30
Benzo (a) anthracene	0.0191	0.00500	"	0.0333	ND	57.4	30-120	6.79	30
Benzo (a) pyrene	0.0225	0.00500	"	0.0333	ND	67.5	30-120	6.44	30
Benzo (b) fluoranthene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	7.75	30
Benzo (k) fluoranthene	0.0244	0.00500	"	0.0333	ND	73.2	30-120	8.21	30
Chrysene	0.0196	0.00500	"	0.0333	ND	58.8	30-120	9.11	30
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	15.3	30
Fluoranthene	0.0233	0.00500	"	0.0333	ND	69.8	30-120	5.38	30
Fluorene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	6.55	30
Indeno (1,2,3-cd) pyrene	0.0106	0.00500	"	0.0333	ND	31.7	30-120	11.2	30
Pyrene	0.0203	0.00500	"	0.0333	ND	61.0	35-142	0.337	30
1-Methylnaphthalene	0.0271	0.00500	"	0.0333	ND	81.2	15-130	11.3	50
2-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.0	15-130	7.68	50
Surrogate: 2-Methylnaphthalene-d10	0.0271		"	0.0333		81.2	40-150		
Surrogate: Fluoranthene-d10	0.0228		"	0.0333		68.4	40-150		

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0209 - EPA 3050B

Blank (BFE0209-BLK1)

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BFE0209-BS1)

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	34.5	0.200	mg/kg wet	40.0	86.3	80-120
Barium	32.6	0.400	"	40.0	81.4	80-120
Selenium	3.59	0.260	"	4.00	89.8	80-120

Duplicate (BFE0209-DUP1)

Source: 2204005-01

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	ND	0.200	mg/kg dry	ND		20
Barium	12.3	0.400	"	11.9	2.70	20
Selenium	0.318	0.260	"	0.253	23.0	20

QR-01

Matrix Spike (BFE0209-MS1)

Source: 2204005-01

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	37.3	0.200	mg/kg dry	45.7	ND	81.7	75-125
Barium	47.3	0.400	"	45.7	11.9	77.3	75-125
Selenium	4.11	0.260	"	4.57	0.253	84.4	75-125

Matrix Spike Dup (BFE0209-MSD1)

Source: 2204005-01

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	37.2	0.200	mg/kg dry	45.7	ND	81.4	75-125	0.389	25
Barium	47.1	0.400	"	45.7	11.9	76.9	75-125	0.411	25
Selenium	4.07	0.260	"	4.57	0.253	83.6	75-125	0.914	25

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

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

Summit Scientific

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

Batch BFE0248 - General Preparation

Duplicate (BFE0248-DUP1)

Source: 2203541-01

Prepared & Analyzed: 05/12/22

% Solids	79.5	%	77.9	2.07	20
----------	------	---	------	------	----

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

05/31/22 13:34

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

Summit Scientific

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

Batch BFE0660 - General Preparation

LCS (BFE0660-BS1)

Prepared: 05/27/22 Analyzed: 05/30/22

pH	9.14	pH Units	9.18	99.6	95-105
----	------	----------	------	------	--------

Duplicate (BFE0660-DUP1)

Source: 2203333-01

Prepared: 05/27/22 Analyzed: 05/30/22

pH	8.35	pH Units	8.30	0.601	20
----	------	----------	------	-------	----

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/31/22 13:34

Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
I-02	This sample was analyzed outside of the recommended holding time.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 31, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2204047

Enclosed are the results of analyses for samples received by Summit Scientific on 04/04/22 17:17. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', written in a cursive style.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS46@8'	2204047-01	Soil	04/04/22 10:20	04/04/22 17:17
SS47@2'	2204047-02	Soil	04/04/22 11:50	04/04/22 17:17
SS48@5'	2204047-03	Soil	04/04/22 11:40	04/04/22 17:17
SS49@2.5'	2204047-04	Soil	04/04/22 12:15	04/04/22 17:17
SS50@8'	2204047-05	Soil	04/04/22 13:59	04/04/22 17:17

Summit Scientific

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

Summit Scientific

S₂

2204047

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020

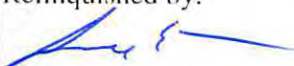

Phone: 303-487-1228

Project Name: Warning 3, 4-2 Tank Battery

Sampler Name: Samuel Anderson

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	Other			
1	SS46 e 8'	4/4/22	1020	3			X			X				X	X	X					pH, EC, SAR by saturated paste
2	SS47 e 2'		1150	3			X			X				X	X	X					X
3	SS48 e 5'		1140	3			X			X				X	X	X					X
4	SS49 e 2.5'		1215	3			X			X					X	X	X				
5	SS50 e 8'		1359	3			X			X				X	X	X					X
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 1530 4/4/22	Received by: Tasman's Lock Box	Date/Time: 1530 4/4/22	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours 48 hours	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4422 1717	Received by: 	Date/Time: 4422 1717	Sample Integrity: Temperature Upon Receipt: 3.6	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S2 Work Order# 2204047

Client: Dock/Tasman Client Project ID: Werning 3,4-2 Tank Battery

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

--	--	--	--	--

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

Temp ($^{\circ}\text{C}$)	3.6
-----------------------------	-----

Thermometer #	1
---------------	---

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature $< 6^{\circ}\text{C}$ ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	—			on ICE
Were all samples received intact ⁽¹⁾ ?	—			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?	—			
Are samples due within 48 hours present?	—			Same day
Are water samples with short hold times present? NOTE: The short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe^{2+}), Hexavalent Chromium (Cr^{6+} , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			—	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	—			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	—			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	—			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			—	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the comments column – HCl, H_2SO_4 , NaOH, HNO_3 , etc.			✓	
If samples are acid preserved for metals, is the $\text{pH} \leq 2$ ⁽¹⁾ ? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
<u>Additional Comments (if any):</u>				

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

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


Custodian Printed Name

4.4.22
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS46@8'
2204047-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/04/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0072	04/04/22	04/04/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/04/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/04/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0073	04/04/22	04/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/04/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS46@8'
2204047-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/04/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0077	04/05/22	04/06/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/04/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		56.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/04/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	27.8	0.400	"	"	"	"	"	"	
Selenium	0.383	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/04/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.4		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **04/04/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.45		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS46@8'
2204047-01 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS47@2'
2204047-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/04/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0072	04/04/22	04/04/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/04/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/04/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0073	04/04/22	04/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/04/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		91.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS47@2'
2204047-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/04/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0077	04/05/22	04/06/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/04/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/04/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	7.52	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/04/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.9		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **04/04/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.94		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS47@2'
2204047-02 (Soil)

Summit Scientific

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS48@5'
2204047-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/04/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0072	04/04/22	04/04/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/04/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		98.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/04/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0073	04/04/22	04/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/04/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS48@5'
2204047-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/04/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0077	04/05/22	04/06/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/04/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		54.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/04/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	93.8	0.400	"	"	"	"	"	"	
Selenium	0.834	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/04/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	76.3		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **04/04/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.71		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	1-02

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS48@5'
2204047-03 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS49@2.5'
2204047-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/04/22 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.0208	0.0100	mg/L	1	BFD0093	04/05/22	04/10/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/04/22 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	ND	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	13.1	0.400	"	"	"	"	"	"	
Selenium	0.321	0.260	"	"	"	"	"	"	

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

Date Sampled: **04/04/22 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	20.5	0.0510	mg/L dry	1	BFD0146	04/07/22	04/11/22	EPA 6020B	
Magnesium	6.42	0.0510	"	"	"	"	"	"	
Sodium	12.7	0.0510	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/04/22 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Sodium Adsorption Ratio	0.627	0.00100	units	1	BFD0224	04/12/22	04/12/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/04/22 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	98.0		%	1	BFD0121	04/06/22	04/07/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS49@2.5'
2204047-04 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/04/22 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.302	0.0100		mmhos/cm	1	BFD0177	04/08/22	04/08/22	EPA 120.1	

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

Date Sampled: **04/04/22 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.81			pH Units	1	BFD0176	04/08/22	04/08/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS50@8'
2204047-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/04/22 13:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0072	04/04/22	04/04/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/04/22 13:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/04/22 13:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0073	04/04/22	04/05/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/04/22 13:59**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS50@8'
2204047-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/04/22 13:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0077	04/05/22	04/06/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/04/22 13:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		77.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/04/22 13:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	5.40	0.400	"	"	"	"	"	"	
Selenium	0.367	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/04/22 13:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.3		%	1	BFE0248	05/12/22	05/12/22	Calculation	

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

Date Sampled: **04/04/22 13:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.30		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

SS50@8'
2204047-05 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFD0072 - EPA 5030 Soil MS

Blank (BFD0072-BLK1)

Prepared: 04/04/22 Analyzed: 04/05/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0557		"	0.0400		139	50-150			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	50-150			

LCS (BFD0072-BS1)

Prepared: 04/04/22 Analyzed: 04/05/22

Benzene	0.0896	0.0020	mg/kg	0.100		89.6	70-130			
Toluene	0.100	0.0050	"	0.100		100	70-130			
Ethylbenzene	0.0881	0.0050	"	0.100		88.1	70-130			
m,p-Xylene	0.187	0.010	"	0.200		93.7	70-130			
o-Xylene	0.0941	0.0050	"	0.100		94.1	70-130			
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100		103	70-130			
1,3,5-Trimethylbenzene	0.0969	0.0050	"	0.100		96.9	70-130			
Naphthalene	0.106	0.0038	"	0.100		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0524		"	0.0400		131	50-150			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107	50-150			

Matrix Spike (BFD0072-MS1)

Source: 2204043-01

Prepared: 04/04/22 Analyzed: 04/05/22

Benzene	0.0910	0.0020	mg/kg	0.100	ND	91.0	70-130			
Toluene	0.106	0.0050	"	0.100	ND	106	70-130			
Ethylbenzene	0.0944	0.0050	"	0.100	ND	94.4	70-130			
m,p-Xylene	0.203	0.010	"	0.200	ND	102	70-130			
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130			
1,2,4-Trimethylbenzene	0.114	0.0050	"	0.100	ND	114	70-130			
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130			
Naphthalene	0.122	0.0038	"	0.100	ND	122	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0545		"	0.0400		136	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0442		"	0.0400		111	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFD0072 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0072-MSD1)		Source: 2204043-01			Prepared: 04/04/22 Analyzed: 04/05/22					
Benzene	0.0916	0.0020	mg/kg	0.100	ND	91.6	70-130	0.559	30	
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	1.86	30	
Ethylbenzene	0.0933	0.0050	"	0.100	ND	93.3	70-130	1.18	30	
m,p-Xylene	0.199	0.010	"	0.200	ND	99.4	70-130	2.15	30	
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	1.56	30	
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	3.47	30	
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	2.07	30	
Naphthalene	0.130	0.0038	"	0.100	ND	130	70-130	6.55	30	
Surrogate: 1,2-Dichloroethane-d4		0.0555	"	0.0400		139	50-150			
Surrogate: Toluene-d8		0.0414	"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene		0.0436	"	0.0400		109	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFD0073 - EPA 3550A

Blank (BFD0073-BLK1)

Prepared: 04/04/22 Analyzed: 04/05/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFD0073-BS1)

Prepared: 04/04/22 Analyzed: 04/05/22

C10-C28 (DRO)	387	50	mg/kg	500	77.5	70-130
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Matrix Spike (BFD0073-MS1)

Source: 2204043-01

Prepared: 04/04/22 Analyzed: 04/05/22

C10-C28 (DRO)	416	50	mg/kg	500	16.8	79.8	70-130
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Matrix Spike Dup (BFD0073-MSD1)

Source: 2204043-01

Prepared: 04/04/22 Analyzed: 04/05/22

C10-C28 (DRO)	405	50	mg/kg	500	16.8	77.7	70-130	2.49	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0077 - EPA 5030 Soil MS

Blank (BFD0077-BLK1)

Prepared & Analyzed: 04/05/22

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0206		"	0.0333		61.9		40-150			
Surrogate: Fluoranthene-d10	0.0180		"	0.0333		54.1		40-150			

LCS (BFD0077-BS1)

Prepared & Analyzed: 04/05/22

Acenaphthene	0.0176	0.00500	mg/kg	0.0333		52.9		31-137			
Anthracene	0.0179	0.00500	"	0.0333		53.8		30-120			
Benzo (a) anthracene	0.0167	0.00500	"	0.0333		50.2		30-120			
Benzo (a) pyrene	0.0197	0.00500	"	0.0333		59.0		30-120			
Benzo (b) fluoranthene	0.0194	0.00500	"	0.0333		58.3		30-120			
Benzo (k) fluoranthene	0.0215	0.00500	"	0.0333		64.4		30-120			
Chrysene	0.0179	0.00500	"	0.0333		53.6		30-120			
Dibenz (a,h) anthracene	0.0191	0.00500	"	0.0333		57.4		30-120			
Fluoranthene	0.0202	0.00500	"	0.0333		60.5		30-120			
Fluorene	0.0169	0.00500	"	0.0333		50.6		30-120			
Indeno (1,2,3-cd) pyrene	0.0123	0.00500	"	0.0333		36.8		30-120			
Pyrene	0.0158	0.00500	"	0.0333		47.4		35-142			
1-Methylnaphthalene	0.0242	0.00500	"	0.0333		72.6		35-142			
2-Methylnaphthalene	0.0221	0.00500	"	0.0333		66.4		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0244		"	0.0333		73.1		40-150			
Surrogate: Fluoranthene-d10	0.0205		"	0.0333		61.5		40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0077 - EPA 5030 Soil MS

Matrix Spike (BFD0077-MS1)

Source: 2203187-02

Prepared & Analyzed: 04/05/22

Acenaphthene	0.0160	0.00500	mg/kg	0.0333	ND	48.0	31-137		
Anthracene	0.0164	0.00500	"	0.0333	ND	49.3	30-120		
Benzo (a) anthracene	0.0161	0.00500	"	0.0333	ND	48.2	30-120		
Benzo (a) pyrene	0.0187	0.00500	"	0.0333	ND	56.1	30-120		
Benzo (b) fluoranthene	0.0186	0.00500	"	0.0333	ND	55.7	30-120		
Benzo (k) fluoranthene	0.0203	0.00500	"	0.0333	ND	60.9	30-120		
Chrysene	0.0168	0.00500	"	0.0333	ND	50.3	30-120		
Dibenz (a,h) anthracene	0.0175	0.00500	"	0.0333	ND	52.4	30-120		
Fluoranthene	0.0190	0.00500	"	0.0333	ND	56.9	30-120		
Fluorene	0.0156	0.00500	"	0.0333	ND	46.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0114	0.00500	"	0.0333	ND	34.3	30-120		
Pyrene	0.0160	0.00500	"	0.0333	ND	48.1	35-142		
1-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.2	15-130		
2-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.4	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0197		"	0.0333		59.0	40-150		
Surrogate: Fluoranthene-d10	0.0192		"	0.0333		57.5	40-150		

Matrix Spike Dup (BFD0077-MSD1)

Source: 2203187-02

Prepared & Analyzed: 04/05/22

Acenaphthene	0.0161	0.00500	mg/kg	0.0333	ND	48.2	31-137	0.537	30
Anthracene	0.0160	0.00500	"	0.0333	ND	48.0	30-120	2.70	30
Benzo (a) anthracene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	5.00	30
Benzo (a) pyrene	0.0175	0.00500	"	0.0333	ND	52.4	30-120	6.88	30
Benzo (b) fluoranthene	0.0178	0.00500	"	0.0333	ND	53.3	30-120	4.46	30
Benzo (k) fluoranthene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	5.15	30
Chrysene	0.0157	0.00500	"	0.0333	ND	47.1	30-120	6.53	30
Dibenz (a,h) anthracene	0.0169	0.00500	"	0.0333	ND	50.6	30-120	3.55	30
Fluoranthene	0.0185	0.00500	"	0.0333	ND	55.4	30-120	2.60	30
Fluorene	0.0155	0.00500	"	0.0333	ND	46.6	30-120	0.762	30
Indeno (1,2,3-cd) pyrene	0.0109	0.00500	"	0.0333	ND	32.7	30-120	4.99	30
Pyrene	0.0151	0.00500	"	0.0333	ND	45.4	35-142	5.93	30
1-Methylnaphthalene	0.0207	0.00500	"	0.0333	ND	62.2	15-130	3.21	50
2-Methylnaphthalene	0.0205	0.00500	"	0.0333	ND	61.5	15-130	8.72	50
Surrogate: 2-Methylnaphthalene-d10	0.0222		"	0.0333		66.5	40-150		
Surrogate: Fluoranthene-d10	0.0186		"	0.0333		55.8	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

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

Summit Scientific

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

Batch BFD0093 - EPA 3050B

Blank (BFD0093-BLK1)

Prepared: 04/05/22 Analyzed: 04/09/22

Boron ND 0.0100 mg/L

LCS (BFD0093-BS1)

Prepared: 04/05/22 Analyzed: 04/09/22

Boron 4.83 0.0100 mg/L 5.00 96.7 80-120

Duplicate (BFD0093-DUP1)

Source: 2203186-01

Prepared: 04/05/22 Analyzed: 04/10/22

Boron 0.0258 0.0100 mg/L 0.0335 25.9 20 QR-04

Matrix Spike (BFD0093-MS1)

Source: 2203186-01

Prepared: 04/05/22 Analyzed: 04/10/22

Boron 4.90 0.0100 mg/L 5.00 0.0335 97.4 75-125

Matrix Spike Dup (BFD0093-MSD1)

Source: 2203186-01

Prepared: 04/05/22 Analyzed: 04/10/22

Boron 4.83 0.0100 mg/L 5.00 0.0335 95.9 75-125 1.46 25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0209 - EPA 3050B

Blank (BFE0209-BLK1)

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BFE0209-BS1)

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	34.5	0.200	mg/kg wet	40.0	86.3	80-120
Barium	32.6	0.400	"	40.0	81.4	80-120
Selenium	3.59	0.260	"	4.00	89.8	80-120

Duplicate (BFE0209-DUP1)

Source: 2204005-01

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	ND	0.200	mg/kg dry	ND		20
Barium	12.3	0.400	"	11.9	2.70	20
Selenium	0.318	0.260	"	0.253	23.0	20

QR-01

Matrix Spike (BFE0209-MS1)

Source: 2204005-01

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	37.3	0.200	mg/kg dry	45.7	ND	81.7	75-125
Barium	47.3	0.400	"	45.7	11.9	77.3	75-125
Selenium	4.11	0.260	"	4.57	0.253	84.4	75-125

Matrix Spike Dup (BFE0209-MSD1)

Source: 2204005-01

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	37.2	0.200	mg/kg dry	45.7	ND	81.4	75-125	0.389	25
Barium	47.1	0.400	"	45.7	11.9	76.9	75-125	0.411	25
Selenium	4.07	0.260	"	4.57	0.253	83.6	75-125	0.914	25

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

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

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

Batch BFD0146 - General Preparation

Blank (BFD0146-BLK1)

Prepared: 04/07/22 Analyzed: 04/11/22

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

LCS (BFD0146-BS1)

Prepared: 04/07/22 Analyzed: 04/11/22

Calcium	5.37	0.0500	mg/L wet	5.00	107	70-130
Magnesium	5.04	0.0500	"	5.00	101	70-130
Sodium	4.85	0.0500	"	5.00	97.0	70-130

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

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

Summit Scientific

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

Batch BFD0121 - General Preparation

Duplicate (BFD0121-DUP1) **Source: 2203553-01** Prepared: 04/06/22 Analyzed: 04/07/22

% Solids	83.4	%		82.4		1.22	20
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Batch BFE0248 - General Preparation

Duplicate (BFE0248-DUP1) **Source: 2203541-01** Prepared & Analyzed: 05/12/22

% Solids	79.5	%		77.9		2.07	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFD0177 - General Preparation

Blank (BFD0177-BLK1)

Prepared & Analyzed: 04/08/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFD0177-BS1)

Prepared & Analyzed: 04/08/22

Specific Conductance (EC) 0.150 0.0100 mmhos/cm 0.150 99.9 95-105

Duplicate (BFD0177-DUP1)

Source: 2204044-01

Prepared & Analyzed: 04/08/22

Specific Conductance (EC) 3.74 0.0100 mmhos/cm 3.73 0.134 20

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFD0176 - General Preparation

LCS (BFD0176-BS1)

Prepared & Analyzed: 04/08/22

pH	9.08		pH Units	9.18		98.9	95-105
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Duplicate (BFD0176-DUP1)

Source: 2203523-01

Prepared & Analyzed: 04/08/22

pH	7.35		pH Units	7.33		0.272	20
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Batch BFE0660 - General Preparation

LCS (BFE0660-BS1)

Prepared: 05/27/22 Analyzed: 05/30/22

pH	9.14		pH Units	9.18		99.6	95-105
----	------	--	----------	------	--	------	--------

Duplicate (BFE0660-DUP1)

Source: 2203333-01

Prepared: 05/27/22 Analyzed: 05/30/22

pH	8.35		pH Units	8.30		0.601	20
----	------	--	----------	------	--	-------	----

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 13:39

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
I-02	This sample was analyzed outside of the recommended holding time.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 31, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2204095

Enclosed are the results of analyses for samples received by Summit Scientific on 04/06/22 17:18. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Muri Premer
Project Manager



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS51@2'	2204095-01	Soil	04/06/22 09:30	04/06/22 17:18
SS52@5'	2204095-02	Soil	04/06/22 09:40	04/06/22 17:18
SS53@8'	2204095-03	Soil	04/06/22 09:50	04/06/22 17:18
SS54@8'	2204095-04	Soil	04/06/22 10:57	04/06/22 17:18
SS55@8'	2204095-05	Soil	04/06/22 12:40	04/06/22 17:18
SS56@8'	2204095-06	Soil	04/06/22 13:00	04/06/22 17:18
SS57@8'	2204095-07	Soil	04/06/22 14:15	04/06/22 17:18
SS59@8'	2204095-08	Soil	04/06/22 14:45	04/06/22 17:18
BKG04@2'	2204095-09	Soil	04/06/22 10:03	04/06/22 17:18
BKG04@2.5'	2204095-10	Soil	04/06/22 10:05	04/06/22 17:18
BKG04@5'	2204095-11	Soil	04/06/22 10:13	04/06/22 17:18
BKG04@8'	2204095-12	Soil	04/06/22 10:22	04/06/22 17:18

Summit Scientific

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

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

2204095-01

Page 1 of 2

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020

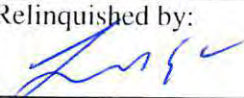
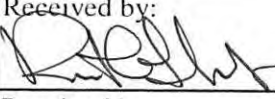
Phone: 303-487-1228

Project Name: Warning 3,4-2 Tank Battery

Sampler Name: Sam Anderson

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR			
1	SS51 e 2'	4/6/22	930	3			X			X				X	X	X				pH, EC, SAR by saturated paste
2	SS52 e 5'		940				X							X	X	X				X
3	SS53 e 8'		950				X							X	X	X				X
4	SS54 e 8'		1057				X							X	X	X				X
5	SS55 e 8'		1240				X							X	X	X				X
6	SS56 e 8'		1300				X							X	X	X				X
7	SS57 e 8'		1415				X							X	X	X				X
8	SS59 e 8'		1445				X							X	X	X				X
9																				
10																				

Relinquished by: 	Date/Time: 1408 4/6/22	Received by: Tasman's Lock Box	Date/Time: 1408 4/6/22	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: 7.9 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4022 1718	Received by: 	Date/Time: 4022 1718		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

2204055.2

Page 2 of 2

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020


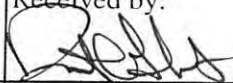
Phone: 303-487-1228

Project Name: Warning 3, 4-2 Tank Battery

Sampler Name: Sam Anderson

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	Metals			
1	BK604 e 2'	4/6/22	1003	1			X			X										pH, EC, SAR by saturated paste	
2	BK604 e 2.5'		1005	1			X			X											
3	BK604 e 5'		1013	1			X			X											
4	BK604 e 8'		1022	1			X			X											
5	SA 5558 e 2.5'		1030	1			X			X											
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 4/6/22	Received by: Tasman's Lock Box	Date/Time: 4/6/22	Turn Around Time (Check) Same Day — 72 hours 24 hours — Standard <input checked="" type="checkbox"/> 48 hours — Sample Integrity: Temperature Upon Receipt: 7.9 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4/6/22	Received by: 	Date/Time: 4/6/22		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

2/2

Sample Receipt Checklist

S2 Work Order#

2204095

Client: PachasmanClient Project ID: Werning 3, 4-2 Tank Battery

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

7.9

Thermometer #

1

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

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


Custodian Printed Name

4.6.22

Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS51@2'
2204095-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/06/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0127	04/06/22	04/06/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		150 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/06/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0128	04/06/22	04/06/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/06/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS51@2'
2204095-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/06/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0130	04/07/22	04/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/06/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		40.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		43.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/06/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.69	0.200	mg/kg dry	1	BFE0210	05/10/22	05/17/22	EPA 6020B	
Barium	174	0.400	"	"	"	"	"	"	
Selenium	1.54	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.2		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/06/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS51@2'
2204095-01 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS52@5'
2204095-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/06/22 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0127	04/06/22	04/06/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	45	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/22 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		215 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/06/22 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	260	50	mg/kg	1	BFD0128	04/06/22	04/06/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/06/22 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		88.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS52@5'
2204095-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/06/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0130	04/07/22	04/08/22	EPA 8270D SIM	
Fluorene	0.0250	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.205	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/06/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		27.0 %	40-150		"	"	"	"	S-02
Surrogate: Fluoranthene-d10		58.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/06/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.529	0.200	mg/kg dry	1	BFE0210	05/10/22	05/17/22	EPA 6020B	
Barium	24.5	0.400	"	"	"	"	"	"	
Selenium	0.384	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.4		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/06/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	3.57		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS52@5'
2204095-02 (Soil)

Summit Scientific

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS53@8'
2204095-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/06/22 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0127	04/06/22	04/06/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/22 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/06/22 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0128	04/06/22	04/06/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/06/22 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		90.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS53@8'
2204095-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/06/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0130	04/07/22	04/08/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/06/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		52.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/06/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0210	05/10/22	05/17/22	EPA 6020B	
Barium	10.1	0.400	"	"	"	"	"	"	
Selenium	0.274	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.0		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/06/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS53@8'
2204095-03 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS54@8'
2204095-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/06/22 10:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0127	04/06/22	04/06/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/22 10:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/06/22 10:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0128	04/06/22	04/06/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/06/22 10:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		89.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS54@8'
2204095-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/06/22 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0130	04/07/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/06/22 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		59.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/06/22 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0210	05/10/22	05/17/22	EPA 6020B	
Barium	17.8	0.400	"	"	"	"	"	"	
Selenium	0.300	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.0		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/06/22 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.31		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS54@8'
2204095-04 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS55@8'
2204095-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/06/22 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0127	04/06/22	04/06/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/22 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/06/22 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0128	04/06/22	04/06/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/06/22 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		91.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS55@8'
2204095-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/06/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0130	04/07/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/06/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		65.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/06/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0210	05/10/22	05/17/22	EPA 6020B	
Barium	11.5	0.400	"	"	"	"	"	"	
Selenium	0.260	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.9		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/06/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS55@8'
2204095-05 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS56@8'
2204095-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/06/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0127	04/06/22	04/06/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/06/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0128	04/06/22	04/06/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/06/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		90.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS56@8'
2204095-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/06/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0130	04/07/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/06/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		61.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		65.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/06/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0210	05/10/22	05/17/22	EPA 6020B	
Barium	6.39	0.400	"	"	"	"	"	"	
Selenium	0.392	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.8		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/06/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.82		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS56@8'
2204095-06 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS57@8'
2204095-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/06/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0127	04/06/22	04/06/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/06/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0128	04/06/22	04/06/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/06/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS57@8'
2204095-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/06/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0130	04/07/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/06/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/06/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0210	05/10/22	05/17/22	EPA 6020B	
Barium	7.66	0.400	"	"	"	"	"	"	
Selenium	0.315	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/06/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.61		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS57@8'
2204095-07 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS59@8'
2204095-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/06/22 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0127	04/06/22	04/06/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/22 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/06/22 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0128	04/06/22	04/06/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/06/22 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS59@8'
2204095-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/06/22 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0130	04/07/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/06/22 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		54.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/06/22 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.598	0.200	mg/kg dry	1	BFE0210	05/10/22	05/17/22	EPA 6020B	
Barium	5.10	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.0		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/06/22 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.98		pH Units	1	BFE0660	05/27/22	05/30/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

SS59@8'
2204095-08 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

BKG04@2'
2204095-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/06/22 10:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.523	0.238	mg/kg dry	1	BFD0147	04/07/22	04/13/22	EPA 6020B	
Barium	85.1	0.477	"	"	"	"	"	"	
Cadmium	ND	0.238	"	"	"	"	"	"	
Copper	6.94	0.477	"	"	"	"	"	"	
Lead	6.18	0.238	"	"	"	"	"	"	
Nickel	5.38	0.477	"	"	"	"	"	"	
Selenium	0.832	0.310	"	"	"	"	"	"	
Silver	0.0331	0.0238	"	"	"	"	"	"	
Zinc	29.6	0.477	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/06/22 10:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0249	04/13/22	04/13/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 10:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	83.9		%	1	BFD0195	04/11/22	04/11/22	Calculation	

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

Date Sampled: **04/06/22 10:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.36		pH Units	1	BFE0121	05/06/22	05/06/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

BKG04@2.5'
2204095-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/06/22 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.397	0.203	mg/kg dry	1	BFD0147	04/07/22	04/13/22	EPA 6020B	
Barium	8.53	0.405	"	"	"	"	"	"	
Cadmium	ND	0.203	"	"	"	"	"	"	
Copper	1.24	0.405	"	"	"	"	"	"	
Lead	1.30	0.203	"	"	"	"	"	"	
Nickel	0.814	0.405	"	"	"	"	"	"	
Selenium	ND	0.263	"	"	"	"	"	"	
Silver	ND	0.0203	"	"	"	"	"	"	
Zinc	5.71	0.405	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/06/22 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0249	04/13/22	04/13/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	98.7		%	1	BFD0195	04/11/22	04/11/22	Calculation	

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

Date Sampled: **04/06/22 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.03		pH Units	1	BFE0121	05/06/22	05/06/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

BKG04@5'
2204095-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/06/22 10:13**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	ND	0.265	mg/kg dry	1	BFD0147	04/07/22	04/13/22	EPA 6020B	
Barium	92.2	0.530	"	"	"	"	"	"	
Cadmium	ND	0.265	"	"	"	"	"	"	
Copper	10.0	0.530	"	"	"	"	"	"	
Lead	7.67	0.265	"	"	"	"	"	"	
Nickel	12.2	0.530	"	"	"	"	"	"	
Selenium	1.26	0.344	"	"	"	"	"	"	
Silver	0.0543	0.0265	"	"	"	"	"	"	
Zinc	46.5	0.530	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/06/22 10:13**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0249	04/13/22	04/13/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 10:13**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	75.5		%	1	BFD0195	04/11/22	04/11/22	Calculation	

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

Date Sampled: **04/06/22 10:13**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.33		pH Units	1	BFE0121	05/06/22	05/06/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

BKG04@8'
2204095-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/06/22 10:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	ND	0.222	mg/kg dry	1	BFD0147	04/07/22	04/13/22	EPA 6020B	
Barium	7.02	0.444	"	"	"	"	"	"	
Cadmium	ND	0.222	"	"	"	"	"	"	
Copper	1.09	0.444	"	"	"	"	"	"	
Lead	1.55	0.222	"	"	"	"	"	"	
Nickel	1.25	0.444	"	"	"	"	"	"	
Selenium	0.338	0.289	"	"	"	"	"	"	
Silver	ND	0.0222	"	"	"	"	"	"	
Zinc	6.16	0.444	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/06/22 10:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0249	04/13/22	04/13/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/06/22 10:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	90.0		%	1	BFD0195	04/11/22	04/11/22	Calculation	

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

Date Sampled: **04/06/22 10:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	6.84		pH Units	1	BFE0121	05/06/22	05/06/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFD0127 - EPA 5030 Soil MS

Blank (BFD0127-BLK1)

Prepared & Analyzed: 04/06/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0542		"	0.0400		135	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150			

LCS (BFD0127-BS1)

Prepared & Analyzed: 04/06/22

Benzene	0.0917	0.0020	mg/kg	0.100		91.7	70-130			
Toluene	0.0994	0.0050	"	0.100		99.4	70-130			
Ethylbenzene	0.0837	0.0050	"	0.100		83.7	70-130			
m,p-Xylene	0.177	0.010	"	0.200		88.6	70-130			
o-Xylene	0.0896	0.0050	"	0.100		89.6	70-130			
1,2,4-Trimethylbenzene	0.0947	0.0050	"	0.100		94.7	70-130			
1,3,5-Trimethylbenzene	0.0909	0.0050	"	0.100		90.9	70-130			
Naphthalene	0.107	0.0038	"	0.100		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0533		"	0.0400		133	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0437		"	0.0400		109	50-150			

Matrix Spike (BFD0127-MS1)

Source: 2204082-01

Prepared & Analyzed: 04/06/22

Benzene	0.0832	0.0020	mg/kg	0.100	ND	83.2	70-130			
Toluene	0.0901	0.0050	"	0.100	ND	90.1	70-130			
Ethylbenzene	0.0774	0.0050	"	0.100	ND	77.4	70-130			
m,p-Xylene	0.166	0.010	"	0.200	ND	83.2	70-130			
o-Xylene	0.0854	0.0050	"	0.100	ND	85.4	70-130			
1,2,4-Trimethylbenzene	0.0929	0.0050	"	0.100	ND	92.9	70-130			
1,3,5-Trimethylbenzene	0.0856	0.0050	"	0.100	ND	85.6	70-130			
Naphthalene	0.120	0.0038	"	0.100	ND	120	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0546		"	0.0400		136	50-150			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0438		"	0.0400		110	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFD0127 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0127-MSD1)		Source: 2204082-01			Prepared & Analyzed: 04/06/22					
Benzene	0.0933	0.0020	mg/kg	0.100	ND	93.3	70-130	11.5	30	
Toluene	0.106	0.0050	"	0.100	ND	106	70-130	16.0	30	
Ethylbenzene	0.0952	0.0050	"	0.100	ND	95.2	70-130	20.6	30	
m,p-Xylene	0.204	0.010	"	0.200	ND	102	70-130	20.5	30	
o-Xylene	0.104	0.0050	"	0.100	ND	104	70-130	19.5	30	
1,2,4-Trimethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130	18.3	30	
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	20.5	30	
Naphthalene	0.123	0.0038	"	0.100	ND	123	70-130	2.46	30	
Surrogate: 1,2-Dichloroethane-d4		0.0542	"	0.0400		136	50-150			
Surrogate: Toluene-d8		0.0405	"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene		0.0429	"	0.0400		107	50-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFD0128 - EPA 3550A

Blank (BFD0128-BLK1)

Prepared & Analyzed: 04/06/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFD0128-BS1)

Prepared & Analyzed: 04/06/22

C10-C28 (DRO)	439	50	mg/kg	500	87.8	70-130
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Matrix Spike (BFD0128-MS1)

Source: 2204082-01

Prepared & Analyzed: 04/06/22

C10-C28 (DRO)	444	50	mg/kg	500	13.8	86.1	70-130
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Matrix Spike Dup (BFD0128-MSD1)

Source: 2204082-01

Prepared & Analyzed: 04/06/22

C10-C28 (DRO)	419	50	mg/kg	500	13.8	81.1	70-130	5.80	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0130 - EPA 5030 Soil MS

Blank (BFD0130-BLK1)

Prepared: 04/07/22 Analyzed: 04/08/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0159		"	0.0333		47.6	40-150			
Surrogate: Fluoranthene-d10	0.0169		"	0.0333		50.8	40-150			

LCS (BFD0130-BS1)

Prepared: 04/07/22 Analyzed: 04/08/22

Acenaphthene	0.0165	0.00500	mg/kg	0.0333		49.5	31-137			
Anthracene	0.0172	0.00500	"	0.0333		51.5	30-120			
Benzo (a) anthracene	0.0187	0.00500	"	0.0333		56.0	30-120			
Benzo (a) pyrene	0.0162	0.00500	"	0.0333		48.5	30-120			
Benzo (b) fluoranthene	0.0170	0.00500	"	0.0333		50.9	30-120			
Benzo (k) fluoranthene	0.0168	0.00500	"	0.0333		50.3	30-120			
Chrysene	0.0179	0.00500	"	0.0333		53.7	30-120			
Dibenz (a,h) anthracene	0.0128	0.00500	"	0.0333		38.3	30-120			
Fluoranthene	0.0170	0.00500	"	0.0333		51.1	30-120			
Fluorene	0.0157	0.00500	"	0.0333		47.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0185	0.00500	"	0.0333		55.5	30-120			
Pyrene	0.0186	0.00500	"	0.0333		55.9	35-142			
1-Methylnaphthalene	0.0151	0.00500	"	0.0333		45.4	35-142			
2-Methylnaphthalene	0.0150	0.00500	"	0.0333		45.1	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0159		"	0.0333		47.6	40-150			
Surrogate: Fluoranthene-d10	0.0176		"	0.0333		52.9	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0130 - EPA 5030 Soil MS

Matrix Spike (BFD0130-MS1)

Source: 2204086-01

Prepared: 04/07/22 Analyzed: 04/08/22

Acenaphthene	0.0183	0.00500	mg/kg	0.0333	ND	54.8	31-137		
Anthracene	0.0186	0.00500	"	0.0333	ND	55.9	30-120		
Benzo (a) anthracene	0.0210	0.00500	"	0.0333	ND	62.9	30-120		
Benzo (a) pyrene	0.0177	0.00500	"	0.0333	ND	53.2	30-120		
Benzo (b) fluoranthene	0.0191	0.00500	"	0.0333	ND	57.2	30-120		
Benzo (k) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.1	30-120		
Chrysene	0.0199	0.00500	"	0.0333	ND	59.7	30-120		
Dibenz (a,h) anthracene	0.0139	0.00500	"	0.0333	ND	41.7	30-120		
Fluoranthene	0.0190	0.00500	"	0.0333	ND	57.0	30-120		
Fluorene	0.0183	0.00500	"	0.0333	ND	55.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0197	0.00500	"	0.0333	ND	59.2	30-120		
Pyrene	0.0222	0.00500	"	0.0333	ND	66.6	35-142		
1-Methylnaphthalene	0.0180	0.00500	"	0.0333	ND	54.0	15-130		
2-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.4	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0181		"	0.0333		54.3	40-150		
Surrogate: Fluoranthene-d10	0.0199		"	0.0333		59.8	40-150		

Matrix Spike Dup (BFD0130-MSD1)

Source: 2204086-01

Prepared: 04/07/22 Analyzed: 04/08/22

Acenaphthene	0.0163	0.00500	mg/kg	0.0333	ND	48.8	31-137	11.7	30
Anthracene	0.0171	0.00500	"	0.0333	ND	51.4	30-120	8.36	30
Benzo (a) anthracene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	5.32	30
Benzo (a) pyrene	0.0169	0.00500	"	0.0333	ND	50.8	30-120	4.56	30
Benzo (b) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.4	30-120	5.10	30
Benzo (k) fluoranthene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	6.00	30
Chrysene	0.0188	0.00500	"	0.0333	ND	56.3	30-120	5.83	30
Dibenz (a,h) anthracene	0.0127	0.00500	"	0.0333	ND	38.0	30-120	9.15	30
Fluoranthene	0.0176	0.00500	"	0.0333	ND	52.9	30-120	7.62	30
Fluorene	0.0161	0.00500	"	0.0333	ND	48.4	30-120	12.8	30
Indeno (1,2,3-cd) pyrene	0.0191	0.00500	"	0.0333	ND	57.2	30-120	3.51	30
Pyrene	0.0207	0.00500	"	0.0333	ND	62.2	35-142	6.72	30
1-Methylnaphthalene	0.0166	0.00500	"	0.0333	ND	49.9	15-130	7.78	50
2-Methylnaphthalene	0.0148	0.00500	"	0.0333	ND	44.3	15-130	14.8	50
Surrogate: 2-Methylnaphthalene-d10	0.0157		"	0.0333		47.2	40-150		
Surrogate: Fluoranthene-d10	0.0184		"	0.0333		55.1	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFD0147 - EPA 3050B

Blank (BFD0147-BLK1)

Prepared: 04/07/22 Analyzed: 04/12/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BFD0147-BS1)

Prepared: 04/07/22 Analyzed: 04/12/22

Arsenic	34.8	0.200	mg/kg wet	40.0	87.1	80-120
Barium	32.5	0.400	"	40.0	81.2	80-120
Cadmium	1.71	0.200	"	2.00	85.3	80-120
Copper	32.7	0.400	"	40.0	81.6	80-120
Lead	16.5	0.200	"	20.0	82.3	80-120
Nickel	35.0	0.400	"	40.0	87.5	80-120
Selenium	3.43	0.260	"	4.00	85.9	80-120
Silver	1.99	0.0200	"	2.00	99.7	80-120
Zinc	36.3	0.400	"	40.0	90.8	80-120

Duplicate (BFD0147-DUP1)

Source: 2204079-01

Prepared: 04/07/22 Analyzed: 04/12/22

Arsenic	2.31	0.213	mg/kg dry	2.27	1.84	20
Barium	59.7	0.425	"	51.4	15.0	20
Cadmium	0.141	0.213	"	0.113	22.1	20
Copper	4.17	0.425	"	3.86	7.65	20
Lead	4.76	0.213	"	4.35	9.13	20
Nickel	5.51	0.425	"	5.12	7.25	20
Selenium	0.507	0.277	"	0.496	2.14	20
Silver	0.0191	0.0213	"	0.0188	1.54	20
Zinc	20.5	0.425	"	20.3	0.874	20

QR-01

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFD0147 - EPA 3050B

Matrix Spike (BFD0147-MS1)		Source: 2204079-01			Prepared: 04/07/22		Analyzed: 04/12/22				
Arsenic	38.9	0.213	mg/kg dry	42.5	2.27	86.0	75-125				
Barium	82.9	0.425	"	42.5	51.4	74.0	75-125				QM-05
Cadmium	1.94	0.213	"	2.13	0.113	85.9	75-125				
Copper	36.9	0.425	"	42.5	3.86	77.7	75-125				
Lead	21.1	0.213	"	21.3	4.35	78.7	75-125				
Nickel	38.5	0.425	"	42.5	5.12	78.4	75-125				
Selenium	3.23	0.277	"	4.25	0.496	64.4	75-125				QM-05
Silver	1.69	0.0213	"	2.13	0.0188	78.6	75-125				
Zinc	57.3	0.425	"	42.5	20.3	87.0	75-125				

Matrix Spike Dup (BFD0147-MSD1)		Source: 2204079-01			Prepared: 04/07/22		Analyzed: 04/12/22				
Arsenic	37.7	0.213	mg/kg dry	42.5	2.27	83.4	75-125	2.94	25		
Barium	89.2	0.425	"	42.5	51.4	88.7	75-125	7.30	25		
Cadmium	1.91	0.213	"	2.13	0.113	84.4	75-125	1.59	25		
Copper	36.5	0.425	"	42.5	3.86	76.6	75-125	1.29	25		
Lead	21.6	0.213	"	21.3	4.35	81.3	75-125	2.64	25		
Nickel	38.7	0.425	"	42.5	5.12	78.9	75-125	0.620	25		
Selenium	3.15	0.277	"	4.25	0.496	62.3	75-125	2.76	25		QM-05
Silver	1.64	0.0213	"	2.13	0.0188	76.3	75-125	2.89	25		
Zinc	57.6	0.425	"	42.5	20.3	87.7	75-125	0.527	25		

Batch BFE0210 - EPA 3050B

Blank (BFE0210-BLK1)					Prepared: 05/10/22		Analyzed: 05/17/22				
Arsenic	ND	0.200	mg/kg wet								
Barium	ND	0.400	"								
Selenium	ND	0.260	"								

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0210 - EPA 3050B

LCS (BFE0210-BS1)

Prepared: 05/10/22 Analyzed: 05/17/22

Arsenic	32.1	0.200	mg/kg wet	40.0		80.2	80-120			
Barium	35.3	0.400	"	40.0		88.3	80-120			
Selenium	3.52	0.260	"	4.00		87.9	80-120			

Duplicate (BFE0210-DUP1)

Source: 2204095-01

Prepared: 05/10/22 Analyzed: 05/17/22

Arsenic	2.50	0.200	mg/kg dry		2.69			7.23	20	
Barium	174	0.400	"		174			0.101	20	
Selenium	1.54	0.260	"		1.54			0.263	20	

Matrix Spike (BFE0210-MS1)

Source: 2204095-01

Prepared: 05/10/22 Analyzed: 05/17/22

Arsenic	42.2	0.200	mg/kg dry	51.8	2.69	76.3	75-125			
Barium	276	0.400	"	51.8	174	198	75-125			QM-02
Selenium	5.57	0.260	"	5.18	1.54	77.7	75-125			

Matrix Spike Dup (BFE0210-MSD1)

Source: 2204095-01

Prepared: 05/10/22 Analyzed: 05/17/22

Arsenic	42.7	0.200	mg/kg dry	51.8	2.69	77.3	75-125	1.19	25	
Barium	279	0.400	"	51.8	174	204	75-125	1.08	25	QM-02
Selenium	5.54	0.260	"	5.18	1.54	77.1	75-125	0.577	25	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFD0249 - 3060A Mod

Blank (BFD0249-BLK1)

Prepared & Analyzed: 04/13/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFD0249-BS1)

Prepared & Analyzed: 04/13/22

Chromium, Hexavalent 26.0 0.30 mg/kg wet 25.0 104 80-120

Duplicate (BFD0249-DUP1)

Source: 2204095-09

Prepared & Analyzed: 04/13/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFD0249-MS1)

Source: 2204095-09

Prepared & Analyzed: 04/13/22

Chromium, Hexavalent 35.6 0.30 mg/kg dry 29.8 ND 120 75-125

Matrix Spike Dup (BFD0249-MSD1)

Source: 2204095-09

Prepared & Analyzed: 04/13/22

Chromium, Hexavalent 33.7 0.30 mg/kg dry 29.8 ND 113 75-125 5.50 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

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

Summit Scientific

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

Batch BFD0195 - General Preparation

Duplicate (BFD0195-DUP1)

Source: 2204079-01

Prepared & Analyzed: 04/11/22

% Solids	93.8	%		94.0		0.199	20
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Batch BFE0206 - General Preparation

Duplicate (BFE0206-DUP1)

Source: 2204095-01

Prepared: 05/10/22 Analyzed: 05/11/22

% Solids	75.6	%		77.2		2.13	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFE0121 - General Preparation

LCS (BFE0121-BS1)

Prepared & Analyzed: 05/06/22

pH	9.06	pH Units	9.18	98.7	95-105
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Duplicate (BFE0121-DUP1)

Source: 2203001-09

Prepared & Analyzed: 05/06/22

pH	8.49	pH Units	8.50	0.118	20
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Batch BFE0660 - General Preparation

LCS (BFE0660-BS1)

Prepared: 05/27/22 Analyzed: 05/30/22

pH	9.14	pH Units	9.18	99.6	95-105
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Duplicate (BFE0660-DUP1)

Source: 2203333-01

Prepared: 05/27/22 Analyzed: 05/30/22

pH	8.35	pH Units	8.30	0.601	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:04

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
QM-02	The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
I-02	This sample was analyzed outside of the recommended holding time.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 31, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2204108

Enclosed are the results of analyses for samples received by Summit Scientific on 04/07/22 17:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS60@8'	2204108-01	Soil	04/07/22 08:45	04/07/22 17:25
SS61@8'	2204108-02	Soil	04/07/22 09:30	04/07/22 17:25
SS62@8'	2204108-03	Soil	04/07/22 10:20	04/07/22 17:25
SS63@8'	2204108-04	Soil	04/07/22 10:45	04/07/22 17:25
SS64@2'	2204108-05	Soil	04/07/22 12:25	04/07/22 17:25
SS65@5'	2204108-06	Soil	04/07/22 12:30	04/07/22 17:25
SS66@8'	2204108-07	Soil	04/07/22 12:45	04/07/22 17:25

Summit Scientific

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

Summit Scientific

S₂

2204108

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

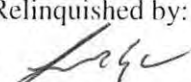
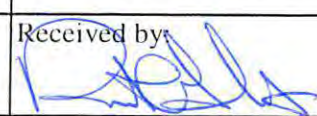
Page 1 of 1

Client: PDC / Tasman
Address: 6855 W 119th Ave
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228
Sampler Name: Sam Anderson

Project Manager: Mark Longhurst
E-Mail: mark.longhurst@PDCE.com

Project Name: Warning 3, 4-2 Tank Battery
Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR				
1	SS60 @ 8'	4/7/22	845	3			X			X				X	X	X					pH, EC, SAR by saturated paste Chrysene, Fluorene, 1-M, 2-M
2	SS61 @ 8'		930											X	X	X					
3	SS62 @ 8'		1020											X	X	X					
4	SS63 @ 8'		1045											X	X	X					
5	SS64 @ 8'		1225											X	X	X					
6	SS65 @ 5'		1230											X	X	X					
7	SS66 @ 8'	↓	1245	↓			↓			↓				X	X	X					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 4/7/22	Received by: Tasman's Lock Box	Date/Time: 4/7/22	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4/7/22 1725	Received by: 	Date/Time: 4/7/22 1725	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 3.7 Samples Intact: <input checked="" type="checkbox"/> Yes No	

S₂

Sample Receipt Checklist

S2 Work Order# 2204108Client: PacTasman Client Project ID: Werning 3, 4-2 Tank Battery

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

--	--	--	--	--

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 3.7 Thermometer # 1

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

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


Custodian Printed Name

4.7.22

Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS60@8'
2204108-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/22 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFD0149	04/07/22	04/07/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/22 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		95.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/22 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0150	04/07/22	04/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/07/22 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		93.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS60@8'
2204108-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/22 08:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0151	04/08/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/07/22 08:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/07/22 08:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.46	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	104	0.400	"	"	"	"	"	"	
Selenium	1.43	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/22 08:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	68.2		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/07/22 08:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	4.64		pH Units	1	BFE0669	05/28/22	05/30/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS60@8'
2204108-01 (Soil)

Summit Scientific

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS61@8'
2204108-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/22 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0149	04/07/22	04/07/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/22 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/22 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0150	04/07/22	04/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/07/22 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		93.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS61@8'
2204108-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0151	04/08/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/07/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		45.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		54.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/07/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.41	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	127	0.400	"	"	"	"	"	"	
Selenium	3.73	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	62.2		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/07/22 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.28		pH Units	1	BFE0669	05/28/22	05/30/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS61@8'
2204108-02 (Soil)

Summit Scientific

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS62@8'
2204108-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0149	04/07/22	04/07/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		93.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0150	04/07/22	04/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/07/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		106 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS62@8'
2204108-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0151	04/08/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/07/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		52.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/07/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.71	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	58.1	0.400	"	"	"	"	"	"	
Selenium	0.607	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.0		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/07/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.86		pH Units	1	BFE0669	05/28/22	05/30/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS62@8'
2204108-03 (Soil)

Summit Scientific

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS63@8'
2204108-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0149	04/07/22	04/07/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0150	04/07/22	04/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/07/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS63@8'
2204108-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0151	04/08/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/07/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		51.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/07/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	9.04	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.7		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/07/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BFE0669	05/28/22	05/30/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS63@8'
2204108-04 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS64@2'
2204108-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/22 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0149	04/07/22	04/07/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/22 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/22 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0150	04/07/22	04/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/07/22 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS64@2'
2204108-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0151	04/08/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/07/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		51.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/07/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	9.91	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.4		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/07/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.19		pH Units	1	BFE0669	05/28/22	05/30/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS64@2'
2204108-05 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS65@5'
2204108-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/22 12:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0149	04/07/22	04/07/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/22 12:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/22 12:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0150	04/07/22	04/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/07/22 12:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS65@5'
2204108-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0151	04/08/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/07/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		45.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		48.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/07/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	7.10	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.1		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/07/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	3.83		pH Units	1	BFE0669	05/28/22	05/30/22	EPA 9045D	I-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS65@5'
2204108-06 (Soil)

Summit Scientific

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS66@8'
2204108-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/22 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0149	04/07/22	04/07/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/22 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/22 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0150	04/07/22	04/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/07/22 12:45**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS66@8'
2204108-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/22 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFD0151	04/08/22	04/09/22	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/07/22 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **04/07/22 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BFE0209	05/10/22	05/16/22	EPA 6020B	
Barium	4.47	0.400	"	"	"	"	"	"	
Selenium	0.270	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/22 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.7		%	1	BFE0206	05/10/22	05/11/22	Calculation	

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

Date Sampled: **04/07/22 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.28		pH Units	1	BFE0669	05/28/22	05/30/22	EPA 9045D	1-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

SS66@8'
2204108-07 (Soil)

Summit Scientific

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

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFD0149 - EPA 5030 Soil MS

Blank (BFD0149-BLK1)

Prepared & Analyzed: 04/07/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0386		"	0.0400		96.4	50-150			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0426		"	0.0400		106	50-150			

LCS (BFD0149-BS1)

Prepared & Analyzed: 04/07/22

Benzene	0.112	0.0020	mg/kg	0.100		112	70-130			
Toluene	0.112	0.0050	"	0.100		112	70-130			
Ethylbenzene	0.100	0.0050	"	0.100		100	70-130			
m,p-Xylene	0.194	0.010	"	0.200		97.0	70-130			
o-Xylene	0.0971	0.0050	"	0.100		97.1	70-130			
1,2,4-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
1,3,5-Trimethylbenzene	0.0987	0.0050	"	0.100		98.7	70-130			
Naphthalene	0.0893	0.0038	"	0.100		89.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0379		"	0.0400		94.6	50-150			
Surrogate: Toluene-d8	0.0419		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		105	50-150			

Matrix Spike (BFD0149-MS1)

Source: 2204108-01

Prepared & Analyzed: 04/07/22

Benzene	0.106	0.0020	mg/kg	0.100	ND	106	70-130			
Toluene	0.105	0.0050	"	0.100	ND	105	70-130			
Ethylbenzene	0.0963	0.0050	"	0.100	ND	96.3	70-130			
m,p-Xylene	0.188	0.010	"	0.200	ND	94.0	70-130			
o-Xylene	0.0930	0.0050	"	0.100	ND	93.0	70-130			
1,2,4-Trimethylbenzene	0.0950	0.0050	"	0.100	ND	95.0	70-130			
1,3,5-Trimethylbenzene	0.0928	0.0050	"	0.100	ND	92.8	70-130			
Naphthalene	0.0768	0.0038	"	0.100	ND	76.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0369		"	0.0400		92.2	50-150			
Surrogate: Toluene-d8	0.0410		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFD0149 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0149-MSD1)	Source: 2204108-01			Prepared: 04/07/22 Analyzed: 04/08/22						
Benzene	0.108	0.0020	mg/kg	0.100	ND	108	70-130	2.00	30	
Toluene	0.109	0.0050	"	0.100	ND	109	70-130	2.94	30	
Ethylbenzene	0.0977	0.0050	"	0.100	ND	97.7	70-130	1.52	30	
m,p-Xylene	0.187	0.010	"	0.200	ND	93.5	70-130	0.592	30	
o-Xylene	0.0935	0.0050	"	0.100	ND	93.5	70-130	0.515	30	
1,2,4-Trimethylbenzene	0.0952	0.0050	"	0.100	ND	95.2	70-130	0.252	30	
1,3,5-Trimethylbenzene	0.0932	0.0050	"	0.100	ND	93.2	70-130	0.323	30	
Naphthalene	0.0752	0.0038	"	0.100	ND	75.2	70-130	2.09	30	
Surrogate: 1,2-Dichloroethane-d4	0.0373		"	0.0400		93.3	50-150			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFD0150 - EPA 3550A

Blank (BFD0150-BLK1)

Prepared & Analyzed: 04/07/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFD0150-BS1)

Prepared: 04/07/22 Analyzed: 04/08/22

C10-C28 (DRO)	470	50	mg/kg	500	94.0	70-130
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Matrix Spike (BFD0150-MS1)

Source: 2204108-01

Prepared: 04/07/22 Analyzed: 04/08/22

C10-C28 (DRO)	459	50	mg/kg	500	9.35	90.0	70-130
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Matrix Spike Dup (BFD0150-MSD1)

Source: 2204108-01

Prepared: 04/07/22 Analyzed: 04/08/22

C10-C28 (DRO)	503	50	mg/kg	500	9.35	98.6	70-130	8.96	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0151 - EPA 5030 Soil MS

Blank (BFD0151-BLK1)

Prepared & Analyzed: 04/08/22

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0182	"	0.0333	54.7	40-150
Surrogate: Fluoranthene-d10	0.0177	"	0.0333	53.2	40-150

LCS (BFD0151-BS1)

Prepared & Analyzed: 04/08/22

Acenaphthene	0.0213	0.00500	mg/kg	0.0333	63.9	31-137
Anthracene	0.0231	0.00500	"	0.0333	69.2	30-120
Benzo (a) anthracene	0.0230	0.00500	"	0.0333	69.0	30-120
Benzo (a) pyrene	0.0214	0.00500	"	0.0333	64.1	30-120
Benzo (b) fluoranthene	0.0129	0.00500	"	0.0333	38.8	30-120
Benzo (k) fluoranthene	0.0264	0.00500	"	0.0333	79.1	30-120
Chrysene	0.0269	0.00500	"	0.0333	80.8	30-120
Dibenz (a,h) anthracene	0.0232	0.00500	"	0.0333	69.7	30-120
Fluoranthene	0.0224	0.00500	"	0.0333	67.2	30-120
Fluorene	0.0260	0.00500	"	0.0333	77.9	30-120
Indeno (1,2,3-cd) pyrene	0.0241	0.00500	"	0.0333	72.4	30-120
Pyrene	0.0338	0.00500	"	0.0333	101	35-142
1-Methylnaphthalene	0.0197	0.00500	"	0.0333	59.0	35-142
2-Methylnaphthalene	0.0179	0.00500	"	0.0333	53.8	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0191	"	0.0333	57.4	40-150
Surrogate: Fluoranthene-d10	0.0220	"	0.0333	66.0	40-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0151 - EPA 5030 Soil MS

Matrix Spike (BFD0151-MS1)

Source: 2204104-01

Prepared & Analyzed: 04/08/22

Acenaphthene	0.0263	0.00500	mg/kg	0.0333	ND	78.9	31-137		
Anthracene	0.0221	0.00500	"	0.0333	ND	66.3	30-120		
Benzo (a) anthracene	0.0227	0.00500	"	0.0333	ND	68.0	30-120		
Benzo (a) pyrene	0.0215	0.00500	"	0.0333	ND	64.5	30-120		
Benzo (b) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.6	30-120		
Benzo (k) fluoranthene	0.0236	0.00500	"	0.0333	ND	70.9	30-120		
Chrysene	0.0282	0.00500	"	0.0333	ND	84.6	30-120		
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333	ND	66.3	30-120		
Fluoranthene	0.0201	0.00500	"	0.0333	ND	60.3	30-120		
Fluorene	0.0251	0.00500	"	0.0333	ND	75.4	30-120		
Indeno (1,2,3-cd) pyrene	0.0249	0.00500	"	0.0333	ND	74.6	30-120		
Pyrene	0.0326	0.00500	"	0.0333	ND	97.7	35-142		
1-Methylnaphthalene	0.0185	0.00500	"	0.0333	ND	55.6	15-130		
2-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	48.1	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0187		"	0.0333		56.1	40-150		
Surrogate: Fluoranthene-d10	0.0210		"	0.0333		62.9	40-150		

Matrix Spike Dup (BFD0151-MSD1)

Source: 2204104-01

Prepared & Analyzed: 04/08/22

Acenaphthene	0.0235	0.00500	mg/kg	0.0333	ND	70.5	31-137	11.2	30
Anthracene	0.0223	0.00500	"	0.0333	ND	66.8	30-120	0.691	30
Benzo (a) anthracene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	1.19	30
Benzo (a) pyrene	0.0213	0.00500	"	0.0333	ND	63.9	30-120	0.926	30
Benzo (b) fluoranthene	0.0207	0.00500	"	0.0333	ND	62.0	30-120	2.27	30
Benzo (k) fluoranthene	0.0275	0.00500	"	0.0333	ND	82.4	30-120	15.0	30
Chrysene	0.0271	0.00500	"	0.0333	ND	81.3	30-120	3.98	30
Dibenz (a,h) anthracene	0.0226	0.00500	"	0.0333	ND	67.9	30-120	2.34	30
Fluoranthene	0.0205	0.00500	"	0.0333	ND	61.5	30-120	1.91	30
Fluorene	0.0246	0.00500	"	0.0333	ND	73.9	30-120	1.98	30
Indeno (1,2,3-cd) pyrene	0.0243	0.00500	"	0.0333	ND	72.8	30-120	2.37	30
Pyrene	0.0310	0.00500	"	0.0333	ND	92.9	35-142	5.06	30
1-Methylnaphthalene	0.0192	0.00500	"	0.0333	ND	57.6	15-130	3.62	50
2-Methylnaphthalene	0.0156	0.00500	"	0.0333	ND	46.7	15-130	2.97	50
Surrogate: 2-Methylnaphthalene-d10	0.0186		"	0.0333		55.7	40-150		
Surrogate: Fluoranthene-d10	0.0216		"	0.0333		64.8	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0209 - EPA 3050B

Blank (BFE0209-BLK1)

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BFE0209-BS1)

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	34.5	0.200	mg/kg wet	40.0	86.3	80-120
Barium	32.6	0.400	"	40.0	81.4	80-120
Selenium	3.59	0.260	"	4.00	89.8	80-120

Duplicate (BFE0209-DUP1)

Source: 2204005-01

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	ND	0.200	mg/kg dry	ND		20
Barium	12.3	0.400	"	11.9	2.70	20
Selenium	0.318	0.260	"	0.253	23.0	20

QR-01

Matrix Spike (BFE0209-MS1)

Source: 2204005-01

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	37.3	0.200	mg/kg dry	45.7	ND	81.7	75-125
Barium	47.3	0.400	"	45.7	11.9	77.3	75-125
Selenium	4.11	0.260	"	4.57	0.253	84.4	75-125

Matrix Spike Dup (BFE0209-MSD1)

Source: 2204005-01

Prepared: 05/10/22 Analyzed: 05/16/22

Arsenic	37.2	0.200	mg/kg dry	45.7	ND	81.4	75-125	0.389	25
Barium	47.1	0.400	"	45.7	11.9	76.9	75-125	0.411	25
Selenium	4.07	0.260	"	4.57	0.253	83.6	75-125	0.914	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

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

Summit Scientific

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

Batch BFE0206 - General Preparation

Duplicate (BFE0206-DUP1)

Source: 2204095-01

Prepared: 05/10/22 Analyzed: 05/11/22

% Solids	75.6	%	77.2	2.13	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

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

Summit Scientific

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

Batch BFE0669 - General Preparation

LCS (BFE0669-BS1)

Prepared: 05/28/22 Analyzed: 05/30/22

pH	9.14	pH Units	9.18	99.6	95-105
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Duplicate (BFE0669-DUP1)

Source: 2204108-01

Prepared: 05/28/22 Analyzed: 05/30/22

pH	4.53	pH Units	4.64	2.40	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/31/22 15:08

Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
I-02	This sample was analyzed outside of the recommended holding time.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 20, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2301152

Enclosed are the results of analyses for samples received by Summit Scientific on 01/10/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Mikayla Axtell", is written over a light gray rectangular background.

Mikayla Axtell For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS67@12'	2301152-01	Soil	01/10/23 10:55	01/10/23 16:30
SS69@8'	2301152-03	Soil	01/10/23 14:56	01/10/23 16:30
SS70@10'	2301152-04	Soil	01/10/23 15:00	01/10/23 16:30

Summit Scientific

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

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Client:	PDC / Tasman	Project Manager:	Mark Longhurst
Address:	6855 W 119th Ave	E-Mail:	mark.longhurst@PDCE.com
City/State/Zip:	Broomfield/ CO/ 80020		
Phone:	303-487-1228	Project Name:	Werning 3,4-2 Tank Battery
Sampler Name:	Sam Anderson	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *	ON HOLD		
1	SS67e12'	1/10/23	1055	3			X			X				X	X	X		X	X	X		
2	SS68e14'		1422																		X	
3	SS69e8'		1456											X	X	X		X	X	X		
4	SS70e10'	↓	1500	↓						↓				X	X	X		X	X	X		
5																						
6																						
7																						
8																						
9																						
10	...																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes: * = pH only * PAH's = chrysene, fluorene, 1-m, 2-m, * = metals = arsenic, barium, selenium.
	1/10/23 1616	Tasman's Lock Box North well office	1/10/23 1616	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
Tasman's Lock Box	1/10/23		1/10/23	48 hours <input type="checkbox"/>	Sample Integrity:
Summit	1630		1630	Temperature Upon Receipt: 8.1	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

Sample Receipt Checklist

S2 Work Order# 23 01/52Client: Reftasman Client Project ID: Warning 3.4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 8.1Thermometer # 1

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

Custodian Printed Name

Date/Time

1.10.23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

SS67@12'
2301152-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGA0202	01/10/23	01/10/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0503	126 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0370	92.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0411	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0204	01/10/23	01/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.6	84.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

SS67@12'
2301152-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0213	01/11/23	01/12/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0261	78.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0242	72.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.662	0.200	mg/kg dry	1	BGA0232	01/11/23	01/11/23	EPA 6020B	
Barium	5.20	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.0		%	1	BGA0238	01/11/23	01/12/23	Calculation	

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

Date Sampled: **01/10/23 10:55**

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

SS67@12'
2301152-01 (Soil)

Summit Scientific

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

pH	7.81	pH Units	1	BGA0239	01/11/23	01/11/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

SS69@8'
2301152-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/23 14:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0202	01/10/23	01/10/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/10/23 14:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0571	143 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0371	92.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0405	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/23 14:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0204	01/10/23	01/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/23 14:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.0	104 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

SS69@8'
2301152-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/10/23 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0213	01/11/23	01/12/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/10/23 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0227	68.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0163	49.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/10/23 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	8.92	0.200	mg/kg dry	1	BGA0232	01/11/23	01/11/23	EPA 6020B	
Barium	167	0.400	"	"	"	"	"	"	
Selenium	1.44	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/23 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	58.3		%	1	BGA0238	01/11/23	01/12/23	Calculation	

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

Date Sampled: **01/10/23 14:56**

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

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

SS69@8'
2301152-03 (Soil)

Summit Scientific

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

pH	7.32	pH Units	1	BGA0239	01/11/23	01/11/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

SS70@10'
2301152-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0202	01/10/23	01/10/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/10/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0509	127 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0368	92.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0204	01/10/23	01/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.6	117 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

SS70@10'
2301152-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/10/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chrysene	ND	0.00500	mg/kg	1	BGA0213	01/11/23	01/12/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/10/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0282	84.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0234	70.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/10/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.458	0.200	mg/kg dry	1	BGA0232	01/11/23	01/11/23	EPA 6020B	
Barium	6.83	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	87.7		%	1	BGA0238	01/11/23	01/12/23	Calculation	

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

Date Sampled: **01/10/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

SS70@10'
2301152-04 (Soil)

Summit Scientific

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

pH	7.60	pH Units	1	BGA0239	01/11/23	01/11/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGA0202 - EPA 5030 Soil MS

Blank (BGA0202-BLK1)

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

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0558		"	0.0400		140	50-150			
Surrogate: Toluene-d8	0.0377		"	0.0400		94.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

LCS (BGA0202-BS1)

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

Benzene	0.0962	0.0020	mg/kg	0.125		77.0	70-130			
Toluene	0.114	0.0050	"	0.125		91.4	70-130			
Ethylbenzene	0.139	0.0050	"	0.125		111	70-130			
m,p-Xylene	0.266	0.010	"	0.250		106	70-130			
o-Xylene	0.129	0.0050	"	0.125		103	70-130			
1,2,4-Trimethylbenzene	0.156	0.0050	"	0.125		124	70-130			
1,3,5-Trimethylbenzene	0.150	0.0050	"	0.125		120	70-130			
Naphthalene	0.139	0.0038	"	0.125		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0562		"	0.0400		141	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.5	50-150			

Matrix Spike (BGA0202-MS1)

Source: 2301151-01

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

Benzene	0.0950	0.0020	mg/kg	0.125	ND	76.0	70-130			
Toluene	0.113	0.0050	"	0.125	ND	90.5	70-130			
Ethylbenzene	0.135	0.0050	"	0.125	ND	108	70-130			
m,p-Xylene	0.260	0.010	"	0.250	ND	104	70-130			
o-Xylene	0.128	0.0050	"	0.125	ND	102	70-130			
1,2,4-Trimethylbenzene	0.151	0.0050	"	0.125	ND	121	70-130			
1,3,5-Trimethylbenzene	0.146	0.0050	"	0.125	ND	117	70-130			
Naphthalene	0.141	0.0038	"	0.125	ND	113	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0579		"	0.0400		145	50-150			
Surrogate: Toluene-d8	0.0375		"	0.0400		93.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		95.9	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGA0202 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0202-MSD1)	Source: 2301151-01			Prepared: 01/10/23 Analyzed: 01/11/23						
Benzene	0.0946	0.0020	mg/kg	0.125	ND	75.7	70-130	0.380	30	
Toluene	0.114	0.0050	"	0.125	ND	91.1	70-130	0.608	30	
Ethylbenzene	0.139	0.0050	"	0.125	ND	112	70-130	3.52	30	
m,p-Xylene	0.268	0.010	"	0.250	ND	107	70-130	3.11	30	
o-Xylene	0.132	0.0050	"	0.125	ND	105	70-130	2.77	30	
1,2,4-Trimethylbenzene	0.154	0.0050	"	0.125	ND	123	70-130	1.63	30	
1,3,5-Trimethylbenzene	0.152	0.0050	"	0.125	ND	121	70-130	4.03	30	
Naphthalene	0.157	0.0038	"	0.125	ND	126	70-130	10.7	30	
Surrogate: 1,2-Dichloroethane-d4	0.0564		"	0.0400		141	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		93.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.7	50-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGA0204 - EPA 3550A

Blank (BGA0204-BLK1)

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

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.9		"	12.5		103	30-150			

LCS (BGA0204-BS1)

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

C10-C28 (DRO)	474	50	mg/kg	500		94.9	70-130			
Surrogate: o-Terphenyl	13.2		"	12.5		106	30-150			

Matrix Spike (BGA0204-MS1)

Source: 2301151-01

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

C10-C28 (DRO)	434	50	mg/kg	500	14.7	83.9	70-130			
Surrogate: o-Terphenyl	12.0		"	12.5		96.2	30-150			

Matrix Spike Dup (BGA0204-MSD1)

Source: 2301151-01

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

C10-C28 (DRO)	465	50	mg/kg	500	14.7	90.0	70-130	6.82	20	
Surrogate: o-Terphenyl	13.3		"	12.5		106	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0213 - EPA 5030 Soil MS

Blank (BGA0213-BLK1)

Prepared & Analyzed: 01/11/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0361		"	0.0333		108	40-150			
Surrogate: Fluoranthene-d10	0.0252		"	0.0333		75.7	40-150			

LCS (BGA0213-BS1)

Prepared & Analyzed: 01/11/23

Acenaphthene	0.0353	0.00500	mg/kg	0.0333		106	31-137			
Anthracene	0.0317	0.00500	"	0.0333		95.0	30-120			
Benzo (a) anthracene	0.0241	0.00500	"	0.0333		72.2	30-120			
Benzo (a) pyrene	0.0355	0.00500	"	0.0333		106	30-120			
Benzo (b) fluoranthene	0.0253	0.00500	"	0.0333		76.0	30-120			
Benzo (k) fluoranthene	0.0351	0.00500	"	0.0333		105	30-120			
Chrysene	0.0306	0.00500	"	0.0333		91.8	30-120			
Dibenz (a,h) anthracene	0.0223	0.00500	"	0.0333		66.8	30-120			
Fluoranthene	0.0340	0.00500	"	0.0333		102	30-120			
Fluorene	0.0331	0.00500	"	0.0333		99.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0238	0.00500	"	0.0333		71.4	30-120			
Pyrene	0.0302	0.00500	"	0.0333		90.6	35-142			
1-Methylnaphthalene	0.0290	0.00500	"	0.0333		87.0	35-142			
2-Methylnaphthalene	0.0313	0.00500	"	0.0333		93.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0294		"	0.0333		88.1	40-150			
Surrogate: Fluoranthene-d10	0.0337		"	0.0333		101	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0213 - EPA 5030 Soil MS

Matrix Spike (BGA0213-MS1)

Source: 2301142-01

Prepared & Analyzed: 01/11/23

Acenaphthene	0.0188	0.00500	mg/kg	0.0333	ND	56.4	31-137		
Anthracene	0.0183	0.00500	"	0.0333	ND	54.8	30-120		
Benzo (a) anthracene	0.0169	0.00500	"	0.0333	ND	50.7	30-120		
Benzo (a) pyrene	0.0216	0.00500	"	0.0333	ND	64.7	30-120		
Benzo (b) fluoranthene	0.0163	0.00500	"	0.0333	ND	48.8	30-120		
Benzo (k) fluoranthene	0.0193	0.00500	"	0.0333	ND	58.0	30-120		
Chrysene	0.0176	0.00500	"	0.0333	ND	52.9	30-120		
Dibenz (a,h) anthracene	0.0174	0.00500	"	0.0333	ND	52.2	30-120		
Fluoranthene	0.0200	0.00500	"	0.0333	ND	59.9	30-120		
Fluorene	0.0194	0.00500	"	0.0333	ND	58.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0168	0.00500	"	0.0333	ND	50.5	30-120		
Pyrene	0.0195	0.00500	"	0.0333	ND	58.5	35-142		
1-Methylnaphthalene	0.0186	0.00500	"	0.0333	ND	55.9	15-130		
2-Methylnaphthalene	0.0215	0.00500	"	0.0333	ND	64.5	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0188		"	0.0333		56.3	40-150		
Surrogate: Fluoranthene-d10	0.0197		"	0.0333		59.1	40-150		

Matrix Spike Dup (BGA0213-MSD1)

Source: 2301142-01

Prepared & Analyzed: 01/11/23

Acenaphthene	0.0229	0.00500	mg/kg	0.0333	ND	68.7	31-137	19.6	30
Anthracene	0.0211	0.00500	"	0.0333	ND	63.3	30-120	14.3	30
Benzo (a) anthracene	0.0195	0.00500	"	0.0333	ND	58.4	30-120	14.0	30
Benzo (a) pyrene	0.0245	0.00500	"	0.0333	ND	73.4	30-120	12.7	30
Benzo (b) fluoranthene	0.0191	0.00500	"	0.0333	ND	57.2	30-120	15.7	30
Benzo (k) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.7	30-120	9.34	30
Chrysene	0.0206	0.00500	"	0.0333	ND	61.9	30-120	15.7	30
Dibenz (a,h) anthracene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	15.4	30
Fluoranthene	0.0224	0.00500	"	0.0333	ND	67.3	30-120	11.5	30
Fluorene	0.0238	0.00500	"	0.0333	ND	71.5	30-120	20.3	30
Indeno (1,2,3-cd) pyrene	0.0198	0.00500	"	0.0333	ND	59.3	30-120	16.1	30
Pyrene	0.0216	0.00500	"	0.0333	ND	64.9	35-142	10.4	30
1-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	62.9	15-130	11.7	50
2-Methylnaphthalene	0.0248	0.00500	"	0.0333	ND	74.3	15-130	14.1	50
Surrogate: 2-Methylnaphthalene-d10	0.0213		"	0.0333		63.9	40-150		
Surrogate: Fluoranthene-d10	0.0214		"	0.0333		64.1	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGA0232 - EPA 3050B

Blank (BGA0232-BLK1)

Prepared & Analyzed: 01/11/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGA0232-BS1)

Prepared & Analyzed: 01/11/23

Arsenic	43.1	0.200	mg/kg wet	40.0	108	80-120
Barium	41.7	0.400	"	40.0	104	80-120
Selenium	4.25	0.260	"	4.00	106	80-120

Duplicate (BGA0232-DUP1)

Source: 2301151-01

Prepared & Analyzed: 01/11/23

Arsenic	1.99	0.200	mg/kg dry	2.08	4.39	20
Barium	112	0.400	"	125	10.9	20
Selenium	ND	0.260	"	ND		20

Matrix Spike (BGA0232-MS1)

Source: 2301151-01

Prepared & Analyzed: 01/11/23

Arsenic	50.0	0.200	mg/kg dry	47.7	2.08	100	75-125
Barium	168	0.400	"	47.7	125	91.7	75-125
Selenium	4.05	0.260	"	4.77	ND	85.0	75-125

Matrix Spike Dup (BGA0232-MSD1)

Source: 2301151-01

Prepared & Analyzed: 01/11/23

Arsenic	47.5	0.200	mg/kg dry	47.7	2.08	95.3	75-125	5.03	25	QM-05
Barium	153	0.400	"	47.7	125	60.6	75-125	9.22	25	
Selenium	4.09	0.260	"	4.77	ND	85.9	75-125	0.995	25	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

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

Summit Scientific

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

Batch BGA0238 - General Preparation

Duplicate (BGA0238-DUP1)		Source: 2301094-01		Prepared: 01/11/23 Analyzed: 01/12/23	
% Solids	86.9		%	87.7	1.02 20

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BGA0239 - General Preparation

LCS (BGA0239-BS1)

Prepared & Analyzed: 01/11/23

pH	5.12	pH Units	5.00	102	95-105
----	------	----------	------	-----	--------

Duplicate (BGA0239-DUP1)

Source: 2301152-01

Prepared & Analyzed: 01/11/23

pH	8.02	pH Units	7.81	2.65	20
----	------	----------	------	------	----

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/20/23 15:10

Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 20, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2301201

Enclosed are the results of analyses for samples received by Summit Scientific on 01/11/23 17:54. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Mikayla Axtell For Paul Shrewsbury
President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS71@12'	2301201-01	Soil	01/11/23 09:59	01/11/23 17:54
SS72@8'	2301201-02	Soil	01/11/23 10:29	01/11/23 17:54
SS73@10'	2301201-03	Soil	01/11/23 10:33	01/11/23 17:54
SS74@8'	2301201-04	Soil	01/11/23 11:00	01/11/23 17:54
SS75@10'	2301201-05	Soil	01/11/23 11:04	01/11/23 17:54

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S₂

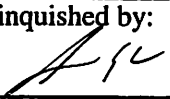
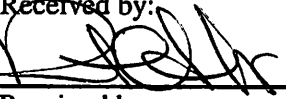
2301201

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page | of |

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Werning 3, 4-2 Tank Battery
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *		
1	SS71 @ 12'	1/11/23	959	3			X			X				X	X	X		X	X	X	pH, EC, SAR by saturated paste
2	SS72 @ 8'		1029																		
3	SS73 @ 10'		1033																		
4	SS74 @ 8'		1100																		
5	SS75 @ 10'		1104																		
6																					
7																					
8																					
9																					
10	...																				

Relinquished by: 	Date/Time: 1/11/23 1348	Received by: Tasman's Lock Box	Date/Time: 1/11/23 1348	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours 48 hours	Standard	Notes: * = only pH * - PAHs = Chrysene, Fluorene, 1-m, 2-m * - Metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman's Lock Box	Date/Time: 1/11/23 1754	Received by: 	Date/Time: 1/11/23 1754	Sample Integrity:		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 7.8	Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

Sample Receipt Checklist

S2 Work Order# 2301201Client: ProframanClient Project ID: Warning 34-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #: _____

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

7.8

Thermometer #

1

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

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

Custodian Printed Name

Date/Time

1-11-23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS71@12'
2301201-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/23 09:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGA0248	01/11/23	01/11/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/11/23 09:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0561	140 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0370	92.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/23 09:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0249	01/11/23	01/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/11/23 09:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	15.0	120 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS71@12'
2301201-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/11/23 09:59**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chrysene	ND	0.00500	mg/kg	1	BGA0254	01/12/23	01/12/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/11/23 09:59**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10	0.0269	80.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0253	76.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/11/23 09:59**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.205	0.200	mg/kg dry	1	BGA0257	01/12/23	01/12/23	EPA 6020B	
Barium	15.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/11/23 09:59**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	88.1		%	1	BGA0286	01/12/23	01/12/23	Calculation	

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

Date Sampled: **01/11/23 09:59**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS71@12'
2301201-01 (Soil)

Summit Scientific

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

pH	7.31	pH Units	1	BGA0288	01/12/23	01/12/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS72@8'
2301201-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/23 10:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0248	01/11/23	01/11/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/11/23 10:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0597	149 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0371	92.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0403	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/23 10:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0249	01/11/23	01/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/11/23 10:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.9	128 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS72@8'
2301201-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/11/23 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0254	01/12/23	01/12/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/11/23 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0157	47.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0136	40.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/11/23 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.37	0.200	mg/kg dry	1	BGA0257	01/12/23	01/12/23	EPA 6020B	
Barium	167	0.400	"	"	"	"	"	"	
Selenium	0.652	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/11/23 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	59.6		%	1	BGA0286	01/12/23	01/12/23	Calculation	

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

Date Sampled: **01/11/23 10:29**

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS72@8'
2301201-02 (Soil)

Summit Scientific

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

pH	7.86	pH Units	1	BGA0288	01/12/23	01/12/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS73@10'
2301201-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/23 10:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0248	01/11/23	01/11/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/11/23 10:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0528	132 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0366	91.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/23 10:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0249	01/11/23	01/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/11/23 10:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.4	98.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS73@10'
2301201-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/11/23 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0254	01/12/23	01/12/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/11/23 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0245	73.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0243	72.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/11/23 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BGA0257	01/12/23	01/12/23	EPA 6020B	
Barium	4.50	0.400	"	"	"	"	"	"	
Selenium	0.428	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/11/23 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.6		%	1	BGA0286	01/12/23	01/12/23	Calculation	

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

Date Sampled: **01/11/23 10:33**

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS73@10'
2301201-03 (Soil)

Summit Scientific

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

pH	7.86	pH Units	1	BGA0288	01/12/23	01/12/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS74@8'
2301201-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0248	01/11/23	01/11/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/11/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0599	150 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0375	93.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0249	01/11/23	01/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/11/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	5.75	46.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS74@8'
2301201-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/11/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0254	01/12/23	01/12/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/11/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0231	69.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0172	51.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/11/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.86	0.200	mg/kg dry	1	BGA0257	01/12/23	01/12/23	EPA 6020B	
Barium	315	0.400	"	"	"	"	"	"	
Selenium	0.799	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/11/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	66.3		%	1	BGA0286	01/12/23	01/12/23	Calculation	

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

Date Sampled: **01/11/23 11:00**

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS74@8'
2301201-04 (Soil)

Summit Scientific

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

pH	7.54	pH Units	1	BGA0288	01/12/23	01/12/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS75@10'
2301201-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/23 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0248	01/11/23	01/11/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/11/23 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0560	140 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0369	92.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0403	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/23 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0249	01/11/23	01/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/11/23 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.2	122 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS75@10'
2301201-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/11/23 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0254	01/12/23	01/12/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/11/23 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0215	64.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0269	80.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/11/23 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.226	0.200	mg/kg dry	1	BGA0257	01/12/23	01/12/23	EPA 6020B	
Barium	7.23	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/11/23 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.2		%	1	BGA0286	01/12/23	01/12/23	Calculation	

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

Date Sampled: **01/11/23 11:04**

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

SS75@10'
2301201-05 (Soil)

Summit Scientific

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

pH	7.66	pH Units	1	BGA0288	01/12/23	01/12/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGA0248 - EPA 5030 Soil MS

Blank (BGA0248-BLK1)

Prepared: 01/11/23 Analyzed: 01/12/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0535		"	0.0400		134	50-150			
Surrogate: Toluene-d8	0.0372		"	0.0400		93.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.5	50-150			

LCS (BGA0248-BS1)

Prepared: 01/11/23 Analyzed: 01/12/23

Benzene	0.0940	0.0020	mg/kg	0.125		75.2	70-130			
Toluene	0.116	0.0050	"	0.125		92.9	70-130			
Ethylbenzene	0.143	0.0050	"	0.125		115	70-130			
m,p-Xylene	0.274	0.010	"	0.250		110	70-130			
o-Xylene	0.136	0.0050	"	0.125		109	70-130			
1,2,4-Trimethylbenzene	0.160	0.0050	"	0.125		128	70-130			
1,3,5-Trimethylbenzene	0.158	0.0050	"	0.125		126	70-130			
Naphthalene	0.131	0.0038	"	0.125		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0562		"	0.0400		141	50-150			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.5	50-150			

Matrix Spike (BGA0248-MS1)

Source: 2301195-01

Prepared: 01/11/23 Analyzed: 01/12/23

Benzene	0.0916	0.0020	mg/kg	0.125	ND	73.3	70-130			
Toluene	0.112	0.0050	"	0.125	ND	89.5	70-130			
Ethylbenzene	0.142	0.0050	"	0.125	ND	113	70-130			
m,p-Xylene	0.274	0.010	"	0.250	ND	110	70-130			
o-Xylene	0.135	0.0050	"	0.125	ND	108	70-130			
1,2,4-Trimethylbenzene	0.130	0.0050	"	0.125	ND	104	70-130			
1,3,5-Trimethylbenzene	0.127	0.0050	"	0.125	ND	102	70-130			
Naphthalene	0.126	0.0038	"	0.125	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0559		"	0.0400		140	50-150			
Surrogate: Toluene-d8	0.0370		"	0.0400		92.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGA0248 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0248-MSD1)	Source: 2301195-01			Prepared: 01/11/23 Analyzed: 01/12/23						
Benzene	0.0910	0.0020	mg/kg	0.125	ND	72.8	70-130	0.624	30	
Toluene	0.113	0.0050	"	0.125	ND	90.4	70-130	0.987	30	
Ethylbenzene	0.143	0.0050	"	0.125	ND	115	70-130	1.12	30	
m,p-Xylene	0.278	0.010	"	0.250	ND	111	70-130	1.26	30	
o-Xylene	0.136	0.0050	"	0.125	ND	109	70-130	0.753	30	
1,2,4-Trimethylbenzene	0.133	0.0050	"	0.125	ND	107	70-130	2.85	30	
1,3,5-Trimethylbenzene	0.128	0.0050	"	0.125	ND	102	70-130	0.659	30	
Naphthalene	0.138	0.0038	"	0.125	ND	110	70-130	8.61	30	
Surrogate: 1,2-Dichloroethane-d4	0.0562		"	0.0400		141	50-150			
Surrogate: Toluene-d8	0.0375		"	0.0400		93.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.6	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGA0249 - EPA 3550A

Blank (BGA0249-BLK1)

Prepared: 01/11/23 Analyzed: 01/12/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	17.4		"	12.5		139	30-150			

LCS (BGA0249-BS1)

Prepared: 01/11/23 Analyzed: 01/12/23

C10-C28 (DRO)	477	50	mg/kg	500		95.5	70-130			
Surrogate: o-Terphenyl	17.1		"	12.5		137	30-150			

Matrix Spike (BGA0249-MS1)

Source: 2301195-01

Prepared: 01/11/23 Analyzed: 01/12/23

C10-C28 (DRO)	428	50	mg/kg	500	14.9	82.7	70-130			
Surrogate: o-Terphenyl	16.7		"	12.5		134	30-150			

Matrix Spike Dup (BGA0249-MSD1)

Source: 2301195-01

Prepared: 01/11/23 Analyzed: 01/12/23

C10-C28 (DRO)	439	50	mg/kg	500	14.9	84.8	70-130	2.45	20	
Surrogate: o-Terphenyl	17.5		"	12.5		140	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0254 - EPA 5030 Soil MS

Blank (BGA0254-BLK1)

Prepared & Analyzed: 01/12/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0216		"	0.0333		64.8		40-150			
Surrogate: Fluoranthene-d10	0.0260		"	0.0333		77.9		40-150			

LCS (BGA0254-BS1)

Prepared & Analyzed: 01/12/23

Acenaphthene	0.0341	0.00500	mg/kg	0.0333		102		31-137			
Anthracene	0.0323	0.00500	"	0.0333		96.9		30-120			
Benzo (a) anthracene	0.0300	0.00500	"	0.0333		90.1		30-120			
Benzo (a) pyrene	0.0272	0.00500	"	0.0333		81.5		30-120			
Benzo (b) fluoranthene	0.0313	0.00500	"	0.0333		93.8		30-120			
Benzo (k) fluoranthene	0.0360	0.00500	"	0.0333		108		30-120			
Chrysene	0.0371	0.00500	"	0.0333		111		30-120			
Dibenz (a,h) anthracene	0.0222	0.00500	"	0.0333		66.6		30-120			
Fluoranthene	0.0336	0.00500	"	0.0333		101		30-120			
Fluorene	0.0342	0.00500	"	0.0333		102		30-120			
Indeno (1,2,3-cd) pyrene	0.0229	0.00500	"	0.0333		68.6		30-120			
Pyrene	0.0366	0.00500	"	0.0333		110		35-142			
1-Methylnaphthalene	0.0275	0.00500	"	0.0333		82.6		35-142			
2-Methylnaphthalene	0.0251	0.00500	"	0.0333		75.2		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0280		"	0.0333		84.1		40-150			
Surrogate: Fluoranthene-d10	0.0337		"	0.0333		101		40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0254 - EPA 5030 Soil MS

Matrix Spike (BGA0254-MS1)

Source: 2301201-01

Prepared & Analyzed: 01/12/23

Acenaphthene	0.0224	0.00500	mg/kg	0.0333	ND	67.2	31-137				
Anthracene	0.0227	0.00500	"	0.0333	ND	68.2	30-120				
Benzo (a) anthracene	0.0244	0.00500	"	0.0333	ND	73.3	30-120				
Benzo (a) pyrene	0.0238	0.00500	"	0.0333	ND	71.3	30-120				
Benzo (b) fluoranthene	0.0235	0.00500	"	0.0333	ND	70.5	30-120				
Benzo (k) fluoranthene	0.0230	0.00500	"	0.0333	ND	69.0	30-120				
Chrysene	0.0239	0.00500	"	0.0333	ND	71.7	30-120				
Dibenz (a,h) anthracene	0.0205	0.00500	"	0.0333	ND	61.6	30-120				
Fluoranthene	0.0234	0.00500	"	0.0333	ND	70.1	30-120				
Fluorene	0.0229	0.00500	"	0.0333	ND	68.6	30-120				
Indeno (1,2,3-cd) pyrene	0.0223	0.00500	"	0.0333	ND	66.9	30-120				
Pyrene	0.0237	0.00500	"	0.0333	ND	71.1	35-142				
1-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.2	15-130				
2-Methylnaphthalene	0.0235	0.00500	"	0.0333	ND	70.4	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0196		"	0.0333		58.8	40-150				
Surrogate: Fluoranthene-d10	0.0232		"	0.0333		69.6	40-150				

Matrix Spike Dup (BGA0254-MSD1)

Source: 2301201-01

Prepared & Analyzed: 01/12/23

Acenaphthene	0.0223	0.00500	mg/kg	0.0333	ND	67.0	31-137	0.364	30
Anthracene	0.0238	0.00500	"	0.0333	ND	71.5	30-120	4.82	30
Benzo (a) anthracene	0.0242	0.00500	"	0.0333	ND	72.7	30-120	0.850	30
Benzo (a) pyrene	0.0241	0.00500	"	0.0333	ND	72.2	30-120	1.24	30
Benzo (b) fluoranthene	0.0238	0.00500	"	0.0333	ND	71.3	30-120	1.23	30
Benzo (k) fluoranthene	0.0233	0.00500	"	0.0333	ND	69.9	30-120	1.30	30
Chrysene	0.0240	0.00500	"	0.0333	ND	72.0	30-120	0.402	30
Dibenz (a,h) anthracene	0.0200	0.00500	"	0.0333	ND	60.1	30-120	2.50	30
Fluoranthene	0.0238	0.00500	"	0.0333	ND	71.5	30-120	1.96	30
Fluorene	0.0225	0.00500	"	0.0333	ND	67.5	30-120	1.56	30
Indeno (1,2,3-cd) pyrene	0.0227	0.00500	"	0.0333	ND	68.0	30-120	1.61	30
Pyrene	0.0249	0.00500	"	0.0333	ND	74.8	35-142	5.04	30
1-Methylnaphthalene	0.0228	0.00500	"	0.0333	ND	68.4	15-130	1.86	50
2-Methylnaphthalene	0.0215	0.00500	"	0.0333	ND	64.6	15-130	8.57	50
Surrogate: 2-Methylnaphthalene-d10	0.0206		"	0.0333		61.9	40-150		
Surrogate: Fluoranthene-d10	0.0242		"	0.0333		72.6	40-150		

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGA0257 - EPA 3050B

Blank (BGA0257-BLK1)

Prepared & Analyzed: 01/12/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGA0257-BS1)

Prepared & Analyzed: 01/12/23

Arsenic	38.7	0.200	mg/kg wet	40.0	96.7	80-120
Barium	37.6	0.400	"	40.0	94.1	80-120
Selenium	3.70	0.260	"	4.00	92.6	80-120

Duplicate (BGA0257-DUP1)

Source: 2301201-01

Prepared & Analyzed: 01/12/23

Arsenic	0.188	0.200	mg/kg dry	0.205	8.54	20
Barium	14.8	0.400	"	15.1	1.87	20
Selenium	ND	0.260	"	ND		20

Matrix Spike (BGA0257-MS1)

Source: 2301201-01

Prepared & Analyzed: 01/12/23

Arsenic	45.3	0.200	mg/kg dry	45.4	0.205	99.4	75-125
Barium	53.0	0.400	"	45.4	15.1	83.5	75-125
Selenium	4.59	0.260	"	4.54	ND	101	75-125

Matrix Spike Dup (BGA0257-MSD1)

Source: 2301201-01

Prepared & Analyzed: 01/12/23

Arsenic	40.8	0.200	mg/kg dry	45.4	0.205	89.4	75-125	10.5	25
Barium	51.4	0.400	"	45.4	15.1	80.1	75-125	2.93	25
Selenium	4.15	0.260	"	4.54	ND	91.3	75-125	10.2	25

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch BGA0286 - General Preparation

Duplicate (BGA0286-DUP1)		Source: 2301146-01		Prepared & Analyzed: 01/12/23						
% Solids	90.2		%		90.2			0.0879	20	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/20/23 15:18

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

Summit Scientific

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

Batch BGA0288 - General Preparation

LCS (BGA0288-BS1)

Prepared & Analyzed: 01/12/23

pH	8.99	pH Units	9.18	97.9	95-105
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Duplicate (BGA0288-DUP1)

Source: 2301201-01

Prepared & Analyzed: 01/12/23

pH	7.45	pH Units	7.31	1.90	20
----	------	----------	------	------	----

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:18

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

January 20, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2301225

Enclosed are the results of analyses for samples received by Summit Scientific on 01/12/23 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WC01@10'	2301225-01	Soil	01/12/23 14:26	01/12/23 17:55
SS76@12'	2301225-02	Soil	01/12/23 08:14	01/12/23 17:55
SS77@8'	2301225-03	Soil	01/12/23 09:26	01/12/23 17:55
SS78@10'	2301225-04	Soil	01/12/23 09:30	01/12/23 17:55
SS79@12'	2301225-05	Soil	01/12/23 10:53	01/12/23 17:55
SS80@8'	2301225-06	Soil	01/12/23 13:07	01/12/23 17:55
SS81@10'	2301225-07	Soil	01/12/23 13:10	01/12/23 17:55
SS82@8'	2301225-08	Soil	01/12/23 13:35	01/12/23 17:55
SS83@10'	2301225-09	Soil	01/12/23 13:40	01/12/23 17:55
SS84@8'	2301225-10	Soil	01/12/23 13:50	01/12/23 17:55
SS85@10'	2301225-11	Soil	01/12/23 13:54	01/12/23 17:55

Summit Scientific

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

Summit Scientific

S₂

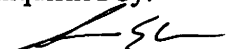
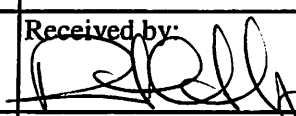
2301225.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 2

Client:	PDC / Tasman	Project Manager:	Mark Longhurst
Address:	6855 W 119th Ave	E-Mail:	mark.longhurst@PDCE.com
City/State/Zip:	Broomfield/ CO/ 80020		
Phone:	303-487-1228	Project Name:	Warning 3,4-2 Tank Battery
Sampler Name:	Sam Anderson	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAHs	Metals		
1	WC01e10'	1/12/23	1426	3			X			X				X	X	X	X	X	X	X	pH, EC, SAR by saturated paste
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10	...																				

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
	1/12/23 1615	Tasman's Lock Box	1/12/23 1615	Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	1/12/23 1755		1/12/23 1755	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt:	8.2	
				Samples Intact:	Yes No	

Summit Scientific

S₂

230/225-2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 2 of 2

Client:	PDC / Tasman	Project Manager:	Mark Longhurst
Address:	6855 W 119th Ave	E-Mail:	mark.longhurst@PDCE.com
City/State/Zip:	Broomfield/ CO/ 80020		
Phone:	303-487-1228	Project Name:	Warning 3, 4-2 Tank Battery
Sampler Name:	Sam Anderson	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *			
1	SS76 e 12'	11/12/23	814	3			X			X				X	X	X		X	X	X		pH, EC, SAR by saturated paste
2	SS77 e 8'		926																			
3	SS78 e 10'		930																			
4	SS79 e 12'		1053																			
5	SS80 e 8'		1307																			
6	SS81 e 10'		1316																			
7	SS82 e 8'		1335																			
8	SS83 e 10'		1340																			
9	SS84 e 8'		1356																			
10	... SS85 e 10'	✓	1354	✓			✓			✓				✓	✓	✓		✓	✓	✓		

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes: * = pH only * = BAH List = Chrysene, Fluorene, 1-m, 2-m. * = metals = Arsenic, Barium, Selenium.
	11/12/23 1615	Tasman's Lock Box	11/12/23 1615	Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	11/22/23 1755		11/22/23 1755	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 8.2 Samples Intact: (Yes) No		

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 230/225Client: Proctorman Client Project ID: Werning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.2Thermometer # 1

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

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

Custodian Printed Name

Date/Time

1-12-23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

WC01@10'
2301225-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 14:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	0.13	0.0020		mg/kg	1	BGA0290	01/12/23	01/12/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	12	0.50		"	100	"	"	"	"	
Xylenes (total)	130	1.0		"	"	"	"	"	"	E
1,2,4-Trimethylbenzene	77	0.50		"	"	"	"	"	"	E
1,3,5-Trimethylbenzene	61	0.50		"	"	"	"	"	"	
Naphthalene	0.020	0.0038		"	1	"	"	"	"	
Gasoline Range Hydrocarbons	3300	50		"	100	"	"	"	"	

Date Sampled: **01/12/23 14:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		122 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		142 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 14:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	930	50		mg/kg	1	BGA0291	01/12/23	01/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/23 14:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		94.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

WC01@10'
2301225-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 14:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGA0294	01/13/23	01/13/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	0.0107	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	0.0497	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	0.00860	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	2.05	0.100		"	20	"	"	01/17/23	"	
2-Methylnaphthalene	4.81	0.100		"	"	"	"	"	"	E

Date Sampled: **01/12/23 14:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		74.9 %		40-150		"	"	01/13/23	"	
Surrogate: Fluoranthene-d10		94.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/12/23 14:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0395	0.0100		mg/L	1	BGA0292	01/12/23	01/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 14:26**

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

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

WC01@10'
2301225-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.370	0.215		mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Barium	10.5	0.431		"	"	"	"	"	"	
Cadmium	ND	0.215		"	"	"	"	"	"	
Copper	0.922	0.431		"	"	"	"	"	"	
Lead	1.33	0.215		"	"	"	"	"	"	
Nickel	0.883	0.431		"	"	"	"	"	"	
Selenium	ND	0.280		"	"	"	"	"	"	
Silver	ND	0.0215		"	"	"	"	"	"	
Zinc	4.83	0.431		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 01/12/23 14:26

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGA0311	01/13/23	01/13/23	EPA 7196A	

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

Date Sampled: 01/12/23 14:26

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	29.5	0.0539		mg/L dry	1	BGA0279	01/12/23	01/13/23	EPA 6020B	
Magnesium	16.8	0.0539		"	"	"	"	"	"	
Sodium	59.2	0.0539		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 01/12/23 14:26

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.16	0.00100		units	1	BGA0338	01/15/23	01/15/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

WC01@10'
2301225-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 14:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.8			%	1	BGA0306	01/13/23	01/13/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/12/23 14:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.635	0.0100		mmhos/cm	1	BGA0315	01/13/23	01/13/23	EPA 120.1	

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

Date Sampled: **01/12/23 14:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.05			pH Units	1	BGA0314	01/13/23	01/13/23	EPA 9045D	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS76@12'
2301225-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0290	01/12/23	01/12/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/12/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0291	01/12/23	01/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		98.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS76@12'
2301225-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 08:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGA0294	01/13/23	01/13/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/12/23 08:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		72.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		81.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 08:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.604	0.200		mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Barium	6.85	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 08:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.9			%	1	BGA0306	01/13/23	01/13/23	Calculation	

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

Date Sampled: **01/12/23 08:14**

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

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS76@12'
2301225-02 (Soil)

Summit Scientific

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

pH	7.92	pH Units	1	BGA0312	01/13/23	01/13/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS77@8'
2301225-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0290	01/12/23	01/12/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/12/23 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0291	01/12/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/23 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		90.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS77@8'
2301225-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0294	01/13/23	01/13/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/12/23 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		58.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	3.22	0.200		mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Barium	66.8	0.400		"	"	"	"	"	"	
Selenium	0.806	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	51.4			%	1	BGA0306	01/13/23	01/13/23	Calculation	

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

Date Sampled: **01/12/23 09:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/20/23 15:27

SS77@8'
2301225-03 (Soil)

Summit Scientific

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

pH	7.31	pH Units	1	BGA0312	01/13/23	01/13/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS78@10'
2301225-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0290	01/12/23	01/12/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/12/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		102 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0291	01/12/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		111 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS78@10'
2301225-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 09:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGA0294	01/13/23	01/13/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/12/23 09:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		84.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 09:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.443	0.200		mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Barium	5.48	0.400		"	"	"	"	"	"	
Selenium	0.634	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 09:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.0			%	1	BGA0306	01/13/23	01/13/23	Calculation	

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

Date Sampled: **01/12/23 09:30**

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

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/20/23 15:27

SS78@10'
2301225-04 (Soil)

Summit Scientific

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

pH	7.94	pH Units	1	BGA0312	01/13/23	01/13/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS79@12'
2301225-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0290	01/12/23	01/12/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/12/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0291	01/12/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/23 10:53**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS79@12'
2301225-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0294	01/13/23	01/13/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/12/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		58.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.327	0.200		mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Barium	6.55	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.2			%	1	BGA0306	01/13/23	01/13/23	Calculation	

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

Date Sampled: **01/12/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/20/23 15:27

SS79@12'
2301225-05 (Soil)

Summit Scientific

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

pH	8.04	pH Units	1	BGA0312	01/13/23	01/13/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS80@8'
2301225-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 13:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0290	01/12/23	01/12/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		96.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.9 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 13:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0291	01/12/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		98.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS80@8'
2301225-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 13:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGA0294	01/13/23	01/13/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		43.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		56.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 13:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.86	0.200		mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Barium	99.0	0.400		"	"	"	"	"	"	
Selenium	0.553	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 13:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	61.5			%	1	BGA0306	01/13/23	01/13/23	Calculation	

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

Date Sampled: **01/12/23 13:07**

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

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/20/23 15:27

SS80@8'
2301225-06 (Soil)

Summit Scientific

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

pH	7.70	pH Units	1	BGA0312	01/13/23	01/13/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS81@10'
2301225-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0290	01/12/23	01/13/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		102 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0291	01/12/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		111 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS81@10'
2301225-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 13:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGA0294	01/13/23	01/13/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 13:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.90	0.200		mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Barium	73.5	0.400		"	"	"	"	"	"	
Selenium	0.829	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 13:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.4			%	1	BGA0306	01/13/23	01/13/23	Calculation	

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

Date Sampled: **01/12/23 13:10**

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

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/20/23 15:27

SS81@10'
2301225-07 (Soil)

Summit Scientific

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

pH	7.94	pH Units	1	BGA0312	01/13/23	01/13/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS82@8'
2301225-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0290	01/12/23	01/13/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		107 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.3 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0291	01/12/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		88.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS82@8'
2301225-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0294	01/13/23	01/13/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		48.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.31	0.200		mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Barium	75.5	0.400		"	"	"	"	"	"	
Selenium	0.463	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	58.7			%	1	BGA0306	01/13/23	01/13/23	Calculation	

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

Date Sampled: **01/12/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/20/23 15:27

SS82@8'
2301225-08 (Soil)

Summit Scientific

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

pH	7.59	pH Units	1	BGA0312	01/13/23	01/13/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS83@10'
2301225-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0290	01/12/23	01/13/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		107 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0291	01/12/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		113 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS83@10'
2301225-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0294	01/13/23	01/13/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		67.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		89.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.321	0.200		mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Barium	2.77	0.400		"	"	"	"	"	"	
Selenium	0.546	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	79.2			%	1	BGA0306	01/13/23	01/13/23	Calculation	

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

Date Sampled: **01/12/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/20/23 15:27

SS83@10'
2301225-09 (Soil)

Summit Scientific

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

pH	7.42	pH Units	1	BGA0312	01/13/23	01/13/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS84@8'
2301225-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0290	01/12/23	01/13/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		101 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0291	01/12/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		132 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS84@8'
2301225-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0294	01/13/23	01/14/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		56.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	11.4	0.200		mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Barium	95.5	0.400		"	"	"	"	"	"	
Selenium	0.657	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	51.7			%	1	BGA0306	01/13/23	01/13/23	Calculation	

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

Date Sampled: **01/12/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS84@8'
2301225-10 (Soil)

Summit Scientific

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

pH	6.48	pH Units	1	BGA0312	01/13/23	01/13/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS85@10'
2301225-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/23 13:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0290	01/12/23	01/13/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/23 13:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0291	01/12/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		134 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

SS85@10'
2301225-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/23 13:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0294	01/13/23	01/14/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/12/23 13:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		66.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/12/23 13:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.26	0.200		mg/kg dry	1	BGA0293	01/12/23	01/13/23	EPA 6020B	
Barium	138	0.400		"	"	"	"	"	"	
Selenium	0.389	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/23 13:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	48.1			%	1	BGA0306	01/13/23	01/13/23	Calculation	

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

Date Sampled: **01/12/23 13:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/20/23 15:27

SS85@10'
2301225-11 (Soil)

Summit Scientific

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

pH	7.29	pH Units	1	BGA0312	01/13/23	01/13/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGA0290 - EPA 5030 Soil MS

Blank (BGA0290-BLK1)

Prepared: 01/12/23 Analyzed: 01/13/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0389		"	0.0400		97.2	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	50-150			

LCS (BGA0290-BS1)

Prepared: 01/12/23 Analyzed: 01/13/23

Benzene	0.0969	0.0020	mg/kg	0.100		96.9	70-130			
Toluene	0.0986	0.0050	"	0.100		98.6	70-130			
Ethylbenzene	0.0916	0.0050	"	0.100		91.6	70-130			
m,p-Xylene	0.199	0.010	"	0.200		99.5	70-130			
o-Xylene	0.0873	0.0050	"	0.100		87.3	70-130			
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.0943	0.0038	"	0.100		94.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0354		"	0.0400		88.5	50-150			

Matrix Spike (BGA0290-MS1)

Source: 2301224-01

Prepared: 01/12/23 Analyzed: 01/13/23

Benzene	0.0972	0.0020	mg/kg	0.100	ND	97.2	70-130			
Toluene	0.0994	0.0050	"	0.100	ND	99.4	70-130			
Ethylbenzene	0.0950	0.0050	"	0.100	ND	95.0	70-130			
m,p-Xylene	0.199	0.010	"	0.200	ND	99.5	70-130			
o-Xylene	0.0903	0.0050	"	0.100	ND	90.3	70-130			
1,2,4-Trimethylbenzene	0.0996	0.0050	"	0.100	ND	99.6	70-130			
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0438		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0380		"	0.0400		95.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0347		"	0.0400		86.8	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGA0290 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0290-MSD1)	Source: 2301224-01			Prepared: 01/12/23 Analyzed: 01/13/23						
Benzene	0.101	0.0020	mg/kg	0.100	ND	101	70-130	3.58	30	
Toluene	0.105	0.0050	"	0.100	ND	105	70-130	5.23	30	
Ethylbenzene	0.0990	0.0050	"	0.100	ND	99.0	70-130	4.11	30	
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130	4.21	30	
o-Xylene	0.0920	0.0050	"	0.100	ND	92.0	70-130	1.94	30	
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	0.929	30	
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	1.73	30	
Naphthalene	0.0994	0.0038	"	0.100	ND	99.4	70-130	1.68	30	
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		97.0	50-150			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0347		"	0.0400		86.8	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGA0291 - EPA 3550A

Blank (BGA0291-BLK1)

Prepared: 01/12/23 Analyzed: 01/13/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	17.6		"	12.5		141	30-150			

LCS (BGA0291-BS1)

Prepared: 01/12/23 Analyzed: 01/13/23

C10-C28 (DRO)	525	50	mg/kg	500		105	70-130			
Surrogate: o-Terphenyl	13.8		"	12.5		110	30-150			

Matrix Spike (BGA0291-MS1)

Source: 2301224-01

Prepared: 01/12/23 Analyzed: 01/13/23

C10-C28 (DRO)	477	50	mg/kg	500	44.3	86.6	70-130			
Surrogate: o-Terphenyl	12.2		"	12.5		97.8	30-150			

Matrix Spike Dup (BGA0291-MSD1)

Source: 2301224-01

Prepared: 01/12/23 Analyzed: 01/13/23

C10-C28 (DRO)	442	50	mg/kg	500	44.3	79.5	70-130	7.72	20	
Surrogate: o-Terphenyl	12.7		"	12.5		101	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0294 - EPA 5030 Soil MS

Blank (BGA0294-BLK1)

Prepared & Analyzed: 01/13/23

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0262	"	0.0333	78.7	40-150
Surrogate: Fluoranthene-d10	0.0338	"	0.0333	101	40-150

LCS (BGA0294-BS1)

Prepared & Analyzed: 01/13/23

Acenaphthene	0.0381	0.00500	mg/kg	0.0333	114	31-137
Anthracene	0.0346	0.00500	"	0.0333	104	30-120
Benzo (a) anthracene	0.0362	0.00500	"	0.0333	109	30-120
Benzo (a) pyrene	0.0382	0.00500	"	0.0333	115	30-120
Benzo (b) fluoranthene	0.0376	0.00500	"	0.0333	113	30-120
Benzo (k) fluoranthene	0.0383	0.00500	"	0.0333	115	30-120
Chrysene	0.0387	0.00500	"	0.0333	116	30-120
Dibenz (a,h) anthracene	0.0352	0.00500	"	0.0333	106	30-120
Fluoranthene	0.0396	0.00500	"	0.0333	119	30-120
Fluorene	0.0389	0.00500	"	0.0333	117	30-120
Indeno (1,2,3-cd) pyrene	0.0358	0.00500	"	0.0333	108	30-120
Pyrene	0.0381	0.00500	"	0.0333	114	35-142
1-Methylnaphthalene	0.0379	0.00500	"	0.0333	114	35-142
2-Methylnaphthalene	0.0371	0.00500	"	0.0333	111	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0321	"	0.0333	96.2	40-150
Surrogate: Fluoranthene-d10	0.0346	"	0.0333	104	40-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0294 - EPA 5030 Soil MS

Matrix Spike (BGA0294-MS1)

Source: 2301172-02

Prepared & Analyzed: 01/13/23

Acenaphthene	0.0194	0.00500	mg/kg	0.0333	ND	58.2	31-137		
Anthracene	0.0239	0.00500	"	0.0333	0.00350	61.3	30-120		
Benzo (a) anthracene	0.0194	0.00500	"	0.0333	ND	58.3	30-120		
Benzo (a) pyrene	0.0193	0.00500	"	0.0333	ND	57.8	30-120		
Benzo (b) fluoranthene	0.0193	0.00500	"	0.0333	ND	57.9	30-120		
Benzo (k) fluoranthene	0.0185	0.00500	"	0.0333	ND	55.5	30-120		
Chrysene	0.0199	0.00500	"	0.0333	ND	59.8	30-120		
Dibenz (a,h) anthracene	0.0158	0.00500	"	0.0333	ND	47.5	30-120		
Fluoranthene	0.0246	0.00500	"	0.0333	0.00259	65.9	30-120		
Fluorene	0.0196	0.00500	"	0.0333	ND	58.8	30-120		
Indeno (1,2,3-cd) pyrene	0.0186	0.00500	"	0.0333	ND	55.9	30-120		
Pyrene	0.0224	0.00500	"	0.0333	0.00255	59.5	35-142		
1-Methylnaphthalene	0.0176	0.00500	"	0.0333	ND	53.0	15-130		
2-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0158		"	0.0333		47.5	40-150		
Surrogate: Fluoranthene-d10	0.0181		"	0.0333		54.3	40-150		

Matrix Spike Dup (BGA0294-MSD1)

Source: 2301172-02

Prepared & Analyzed: 01/13/23

Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.6	31-137	0.724	30
Anthracene	0.0204	0.00500	"	0.0333	0.00350	50.7	30-120	16.0	30
Benzo (a) anthracene	0.0178	0.00500	"	0.0333	ND	53.5	30-120	8.66	30
Benzo (a) pyrene	0.0188	0.00500	"	0.0333	ND	56.4	30-120	2.41	30
Benzo (b) fluoranthene	0.0188	0.00500	"	0.0333	ND	56.5	30-120	2.37	30
Benzo (k) fluoranthene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	2.36	30
Chrysene	0.0184	0.00500	"	0.0333	ND	55.2	30-120	8.03	30
Dibenz (a,h) anthracene	0.0163	0.00500	"	0.0333	ND	48.8	30-120	2.66	30
Fluoranthene	0.0204	0.00500	"	0.0333	0.00259	53.4	30-120	18.5	30
Fluorene	0.0189	0.00500	"	0.0333	ND	56.6	30-120	3.75	30
Indeno (1,2,3-cd) pyrene	0.0180	0.00500	"	0.0333	ND	53.9	30-120	3.66	30
Pyrene	0.0190	0.00500	"	0.0333	0.00255	49.4	35-142	16.3	30
1-Methylnaphthalene	0.0178	0.00500	"	0.0333	ND	53.3	15-130	0.711	50
2-Methylnaphthalene	0.0170	0.00500	"	0.0333	ND	51.1	15-130	9.72	50
Surrogate: 2-Methylnaphthalene-d10	0.0163		"	0.0333		48.8	40-150		
Surrogate: Fluoranthene-d10	0.0200		"	0.0333		59.9	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

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

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

Batch BGA0292 - EPA 3050B

Blank (BGA0292-BLK1)

Prepared: 01/12/23 Analyzed: 01/13/23

Boron ND 0.0100 mg/L

LCS (BGA0292-BS1)

Prepared: 01/12/23 Analyzed: 01/13/23

Boron 4.75 0.0100 mg/L 5.00 95.1 80-120

Duplicate (BGA0292-DUP1)

Source: 2301140-01

Prepared: 01/12/23 Analyzed: 01/13/23

Boron 0.0806 0.0100 mg/L 0.0854 5.83 20

Matrix Spike (BGA0292-MS1)

Source: 2301140-01

Prepared: 01/12/23 Analyzed: 01/13/23

Boron 4.72 0.0100 mg/L 5.00 0.0854 92.8 75-125

Matrix Spike Dup (BGA0292-MSD1)

Source: 2301140-01

Prepared: 01/12/23 Analyzed: 01/13/23

Boron 4.55 0.0100 mg/L 5.00 0.0854 89.2 75-125 3.82 25

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BGA0293 - EPA 3050B

Blank (BGA0293-BLK1)

Prepared: 01/12/23 Analyzed: 01/13/23

Arsenic	ND	0.200	mg/kg wet
Arsenic	ND	0.200	"
Barium	ND	0.400	"
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGA0293-BS1)

Prepared: 01/12/23 Analyzed: 01/13/23

Arsenic	41.4	0.200	mg/kg wet	40.0	104	80-120
Arsenic	41.4	0.200	"	40.0	104	80-120
Barium	42.1	0.400	"	40.0	105	80-120
Barium	42.1	0.400	"	40.0	105	80-120
Cadmium	2.07	0.200	"	2.00	103	80-120
Copper	42.0	0.400	"	40.0	105	80-120
Lead	20.3	0.200	"	20.0	102	80-120
Nickel	40.7	0.400	"	40.0	102	80-120
Selenium	3.86	0.260	"	4.00	96.6	80-120
Selenium	3.86	0.260	"	4.00	96.6	80-120
Silver	2.12	0.0200	"	2.00	106	80-120
Zinc	41.1	0.400	"	40.0	103	80-120

Duplicate (BGA0293-DUP1)

Source: 2301137-01

Prepared: 01/12/23 Analyzed: 01/13/23

Arsenic	1.11	0.200	mg/kg dry	0.968	13.2	20
Arsenic	1.11	0.212	"	0.968	13.2	20
Barium	31.4	0.425	"	28.1	11.1	20
Barium	31.4	0.400	"	28.1	11.1	20
Cadmium	0.0782	0.212	"	0.0778	0.545	20
Copper	2.62	0.425	"	2.23	16.2	20
Lead	4.94	0.212	"	5.04	1.91	20
Nickel	2.07	0.425	"	1.81	13.2	20
Selenium	ND	0.260	"	ND		20
Selenium	ND	0.276	"	ND		20
Silver	0.0106	0.0212	"	0.00935	12.8	20

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGA0293 - EPA 3050B

Duplicate (BGA0293-DUP1)			Source: 2301137-01		Prepared: 01/12/23 Analyzed: 01/13/23					
Zinc	8.88	0.425	mg/kg dry		8.08			9.45	20	

Matrix Spike (BGA0293-MS1)			Source: 2301137-01		Prepared: 01/12/23 Analyzed: 01/13/23					
Arsenic	43.6	0.212	mg/kg dry	42.5	0.968	100	75-125			
Arsenic	43.6	0.200	"	42.5	0.968	100	75-125			
Barium	77.7	0.425	"	42.5	28.1	117	75-125			
Barium	77.7	0.400	"	42.5	28.1	117	75-125			
Cadmium	2.23	0.212	"	2.12	0.0778	101	75-125			
Copper	39.9	0.425	"	42.5	2.23	88.7	75-125			
Lead	28.0	0.212	"	21.2	5.04	108	75-125			
Nickel	38.6	0.425	"	42.5	1.81	86.5	75-125			
Selenium	4.00	0.276	"	4.25	ND	94.0	75-125			
Selenium	4.00	0.260	"	4.25	ND	94.0	75-125			
Silver	2.14	0.0212	"	2.12	0.00935	100	75-125			
Zinc	47.4	0.425	"	42.5	8.08	92.5	75-125			

Matrix Spike Dup (BGA0293-MSD1)			Source: 2301137-01		Prepared: 01/12/23 Analyzed: 01/13/23					
Arsenic	44.4	0.212	mg/kg dry	42.5	0.968	102	75-125	1.88	25	
Arsenic	44.4	0.200	"	42.5	0.968	102	75-125	1.88	25	
Barium	80.2	0.425	"	42.5	28.1	123	75-125	3.19	25	
Barium	80.2	0.400	"	42.5	28.1	123	75-125	3.19	25	
Cadmium	2.31	0.212	"	2.12	0.0778	105	75-125	3.31	25	
Copper	39.9	0.425	"	42.5	2.23	88.6	75-125	0.138	25	
Lead	28.6	0.212	"	21.2	5.04	111	75-125	1.85	25	
Nickel	38.7	0.425	"	42.5	1.81	86.9	75-125	0.508	25	
Selenium	3.93	0.276	"	4.25	ND	92.4	75-125	1.73	25	
Selenium	3.93	0.260	"	4.25	ND	92.4	75-125	1.73	25	
Silver	2.21	0.0212	"	2.12	0.00935	104	75-125	3.48	25	
Zinc	47.7	0.425	"	42.5	8.08	93.3	75-125	0.715	25	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGA0311 - 3060A Mod

Blank (BGA0311-BLK1)

Prepared & Analyzed: 01/13/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGA0311-BS1)

Prepared & Analyzed: 01/13/23

Chromium, Hexavalent 22.8 0.30 mg/kg wet 25.0 91.2 80-120

Duplicate (BGA0311-DUP1)

Source: 2301225-01

Prepared & Analyzed: 01/13/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGA0311-MS1)

Source: 2301225-01

Prepared & Analyzed: 01/13/23

Chromium, Hexavalent 22.9 0.30 mg/kg dry 26.9 ND 85.0 75-125

Matrix Spike Dup (BGA0311-MSD1)

Source: 2301225-01

Prepared & Analyzed: 01/13/23

Chromium, Hexavalent 24.0 0.30 mg/kg dry 26.9 ND 89.2 75-125 4.82 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

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

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

Batch BGA0279 - General Preparation

Blank (BGA0279-BLK1)

Prepared: 01/12/23 Analyzed: 01/13/23

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

LCS (BGA0279-BS1)

Prepared: 01/12/23 Analyzed: 01/13/23

Calcium	5.27	0.0500	mg/L wet	5.00	105	70-130
Magnesium	5.20	0.0500	"	5.00	104	70-130
Sodium	4.86	0.0500	"	5.00	97.2	70-130

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

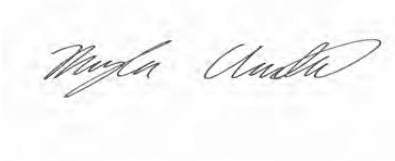
Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch BGA0306 - General Preparation

Duplicate (BGA0306-DUP1)			Source: 2212221-01			Prepared & Analyzed: 01/13/23					
% Solids	86.0		%			85.4		0.695		20	

Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BGA0315 - General Preparation

Blank (BGA0315-BLK1)

Prepared & Analyzed: 01/13/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0315-BS1)

Prepared & Analyzed: 01/13/23

Specific Conductance (EC) 0.152 0.0100 mmhos/cm 0.150 101 95-105

Duplicate (BGA0315-DUP1)

Source: 2301146-01

Prepared & Analyzed: 01/13/23

Specific Conductance (EC) 0.694 0.0100 mmhos/cm 0.706 1.61 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:27

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BGA0312 - General Preparation

LCS (BGA0312-BS1)

Prepared & Analyzed: 01/13/23

pH	9.11		pH Units	9.18		99.2	95-105		
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Duplicate (BGA0312-DUP1)

Source: 2301225-02

Prepared & Analyzed: 01/13/23

pH	7.77		pH Units		7.92			1.91	20
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Batch BGA0314 - General Preparation

LCS (BGA0314-BS1)

Prepared & Analyzed: 01/13/23

pH	9.11		pH Units	9.18		99.2	95-105		
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Duplicate (BGA0314-DUP1)

Source: 2301146-01

Prepared & Analyzed: 01/13/23

pH	8.09		pH Units		8.06			0.372	20
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Summit Scientific

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



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/20/23 15:27

Notes and Definitions

E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 20, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2301259

Enclosed are the results of analyses for samples received by Summit Scientific on 01/13/23 17:57. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Mikayla Axtell", is written over a light gray rectangular background.

Mikayla Axtell For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS86@12'	2301259-01	Soil	01/13/23 09:46	01/13/23 17:57
SS87@12'	2301259-02	Soil	01/13/23 11:09	01/13/23 17:57
SS88@8'	2301259-03	Soil	01/13/23 11:51	01/13/23 17:57
SS89@10'	2301259-04	Soil	01/13/23 11:56	01/13/23 17:57
SS90@12'	2301259-05	Soil	01/13/23 13:06	01/13/23 17:57
SS91@8'	2301259-06	Soil	01/13/23 13:53	01/13/23 17:57
SS92@10'	2301259-07	Soil	01/13/23 13:58	01/13/23 17:57
SS93@12'	2301259-08	Soil	01/13/23 14:50	01/13/23 17:57
SS94@8'	2301259-09	Soil	01/13/23 15:23	01/13/23 17:57
SS95@10'	2301259-10	Soil	01/13/23 15:26	01/13/23 17:57

Summit Scientific

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Summit Scientific

S₂

2301259

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client:	PDC / Tasman	Project Manager:	Mark Longhurst
Address:	6855 W 119th Ave	E-Mail:	mark.longhurst@PDCE.com
City/State/Zip:	Broomfield/ CO/ 80020		
Phone:	303-487-1228	Project Name:	Warning 3,4-2 Tank Battery
Sampler Name:	Sam Anderson	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions			
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ★	PAHs ★		Metals ★		
1	SS86 e 12'	1/13/23	946	3			X			X				X	X	X		X	X	X		pH, EC, SAR by saturated paste
2	SS87 e 12'		1109																			
3	SS88 e 8'		1151																			
4	SS89 e 10'		1156																			
5	SS90 e 12'		1306																			
6	SS91 e 8'		1353																			
7	SS92 e 10'		1358																			
8	SS93 e 12'		1450																			
9	SS94 e 8'		1523																			
10	SS95 e 10'		1526																			

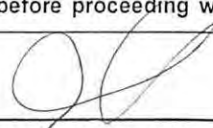
Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
	1/18/23 1640	Tasman's Lock Box	1/13/23 1640	Same Day	X 72 hours	★ = pH only
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	★ = PAH List = Chrysene, Fluorene, 1-M, 2-M.
Tasman's Lock Box	11323 1757		11323 1757	48 hours		★ = metals List = Arsenic, Barium, Selenium.
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt:	8.3	
				Samples Intact:	Yes No	

S₂

Sample Receipt Checklist

S2 Work Order# 230/259Client: ReismanClient Project ID: Werning 3, 4-2 Tam-BattayShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.3Thermometer # 1

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

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

 Custodian Printed Name

1.13.23
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS86@12'
2301259-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 09:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0407	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0328	82.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 09:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	16.2	130 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS86@12'
2301259-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 09:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chrysene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 09:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0248	74.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0280	84.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 09:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.217	0.200	mg/kg dry	1	BGA0334	01/15/23	01/16/23	EPA 6020B	
Barium	3.82	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 09:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	90.5		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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

Date Sampled: **01/13/23 09:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS86@12'
2301259-01 (Soil)

Summit Scientific

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

pH	8.18	pH Units	1	BGA0359	01/16/23	01/16/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS87@12'
2301259-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0418	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0338	84.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.4	131 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS87@12'
2301259-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0298	89.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0304	91.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BGA0334	01/15/23	01/16/23	EPA 6020B	
Barium	4.93	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.1		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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

Date Sampled: **01/13/23 11:09**

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

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS87@12'
2301259-02 (Soil)

Summit Scientific

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

pH	7.84	pH Units	1	BGA0359	01/16/23	01/16/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS88@8'
2301259-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0413	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0410	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0303	75.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.0	128 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS88@8'
2301259-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chrysene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0228	68.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0170	51.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	0.978	0.200	mg/kg dry	1	BGA0334	01/15/23	01/16/23	EPA 6020B	
Barium	169	0.400	"	"	"	"	"	"	
Selenium	0.248	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	76.2		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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

Date Sampled: **01/13/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS88@8'
2301259-03 (Soil)

Summit Scientific

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

pH	7.81	pH Units	1	BGA0359	01/16/23	01/16/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS89@10'
2301259-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.036	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.018	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.016	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0399	99.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0417	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0347	86.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	17.0	136 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS89@10'
2301259-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0247	74.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0257	77.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.989	0.200	mg/kg dry	1	BGA0334	01/15/23	01/16/23	EPA 6020B	
Barium	4.88	0.400	"	"	"	"	"	"	
Selenium	0.831	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.0		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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

Date Sampled: **01/13/23 11:56**

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

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS89@10'
2301259-04 (Soil)

Summit Scientific

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

pH	8.40	pH Units	1	BGA0359	01/16/23	01/16/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS90@12'
2301259-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 13:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0407	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0392	98.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0326	81.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 13:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.7	134 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS90@12'
2301259-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 13:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0315	94.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0326	97.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 13:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.201	0.200	mg/kg dry	1	BGA0334	01/15/23	01/16/23	EPA 6020B	
Barium	6.22	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 13:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.9		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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

Date Sampled: **01/13/23 13:06**

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

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS90@12'
2301259-05 (Soil)

Summit Scientific

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

pH	7.95	pH Units	1	BGA0359	01/16/23	01/16/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS91@8'
2301259-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 13:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0412	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0393	98.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0330	82.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 13:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.4	131 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS91@8'
2301259-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 13:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0270	81.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0262	78.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 13:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.559	0.200	mg/kg dry	1	BGA0334	01/15/23	01/16/23	EPA 6020B	
Barium	31.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 13:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.4		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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

Date Sampled: **01/13/23 13:53**

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

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS91@8'
2301259-06 (Soil)

Summit Scientific

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

pH	8.04	pH Units	1	BGA0359	01/16/23	01/16/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS92@10'
2301259-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 13:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0406	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0383	95.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0301	75.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 13:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.5	132 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS92@10'
2301259-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 13:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 13:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0342	102 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0297	89.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 13:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.233	0.200	mg/kg dry	1	BGA0334	01/15/23	01/16/23	EPA 6020B	
Barium	6.59	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 13:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.4		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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

Date Sampled: **01/13/23 13:58**

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

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS92@10'
2301259-07 (Soil)

Summit Scientific

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

pH	7.93	pH Units	1	BGA0359	01/16/23	01/16/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS93@12'
2301259-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0415	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0377	94.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0320	80.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.6	133 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS93@12'
2301259-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0322	96.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0343	103 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BGA0334	01/15/23	01/16/23	EPA 6020B	
Barium	9.64	0.400	"	"	"	"	"	"	
Selenium	0.268	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.7		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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

Date Sampled: **01/13/23 14:50**

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS93@12'
2301259-08 (Soil)

Summit Scientific

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

pH	7.64	pH Units	1	BGA0359	01/16/23	01/16/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS94@8'
2301259-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 15:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 15:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0423	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0321	80.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 15:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 15:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.3	131 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS94@8'
2301259-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0319	95.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0293	88.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BGA0334	01/15/23	01/16/23	EPA 6020B	
Barium	5.07	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.4		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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

Date Sampled: **01/13/23 15:23**

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS94@8'
2301259-09 (Soil)

Summit Scientific

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

pH	8.29	pH Units	1	BGA0359	01/16/23	01/16/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS95@10'
2301259-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/23 15:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGA0322	01/13/23	01/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/23 15:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0425	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0410	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0335	83.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/23 15:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0323	01/13/23	01/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/23 15:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.9	135 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS95@10'
2301259-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/23 15:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGA0343	01/16/23	01/17/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/23 15:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0276	82.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0225	67.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/13/23 15:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200	mg/kg dry	1	BGA0334	01/15/23	01/16/23	EPA 6020B	
Barium	6.51	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/23 15:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5		%	1	BGA0326	01/15/23	01/15/23	Calculation	

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

Date Sampled: **01/13/23 15:26**

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

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

SS95@10'
2301259-10 (Soil)

Summit Scientific

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

pH	7.87	pH Units	1	BGA0359	01/16/23	01/16/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGA0322 - EPA 5030 Soil MS

Blank (BGA0322-BLK1)

Prepared & Analyzed: 01/13/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0300		"	0.0400		75.0	50-150			

LCS (BGA0322-BS1)

Prepared & Analyzed: 01/13/23

Benzene	0.0950	0.0020	mg/kg	0.100		95.0	70-130			
Toluene	0.0991	0.0050	"	0.100		99.1	70-130			
Ethylbenzene	0.0917	0.0050	"	0.100		91.7	70-130			
m,p-Xylene	0.189	0.010	"	0.200		94.7	70-130			
o-Xylene	0.0866	0.0050	"	0.100		86.6	70-130			
1,2,4-Trimethylbenzene	0.0952	0.0050	"	0.100		95.2	70-130			
1,3,5-Trimethylbenzene	0.0994	0.0050	"	0.100		99.4	70-130			
Naphthalene	0.0910	0.0038	"	0.100		91.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0363		"	0.0400		90.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0322		"	0.0400		80.5	50-150			

Matrix Spike (BGA0322-MS1)

Source: 2301247-01

Prepared & Analyzed: 01/13/23

Benzene	0.0986	0.0020	mg/kg	0.100	ND	98.6	70-130			
Toluene	0.103	0.0050	"	0.100	ND	103	70-130			
Ethylbenzene	0.0869	0.0050	"	0.100	ND	86.9	70-130			
m,p-Xylene	0.184	0.010	"	0.200	ND	92.2	70-130			
o-Xylene	0.0851	0.0050	"	0.100	ND	85.1	70-130			
1,2,4-Trimethylbenzene	0.0922	0.0050	"	0.100	ND	92.2	70-130			
1,3,5-Trimethylbenzene	0.0978	0.0050	"	0.100	ND	97.8	70-130			
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0286		"	0.0400		71.5	50-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGA0322 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0322-MSD1)	Source: 2301247-01			Prepared & Analyzed: 01/13/23						
Benzene	0.0930	0.0020	mg/kg	0.100	ND	93.0	70-130	5.82	30	
Toluene	0.0978	0.0050	"	0.100	ND	97.8	70-130	5.46	30	
Ethylbenzene	0.0868	0.0050	"	0.100	ND	86.8	70-130	0.138	30	
m,p-Xylene	0.181	0.010	"	0.200	ND	90.5	70-130	1.91	30	
o-Xylene	0.0855	0.0050	"	0.100	ND	85.5	70-130	0.492	30	
1,2,4-Trimethylbenzene	0.0943	0.0050	"	0.100	ND	94.3	70-130	2.19	30	
1,3,5-Trimethylbenzene	0.0965	0.0050	"	0.100	ND	96.5	70-130	1.36	30	
Naphthalene	0.103	0.0038	"	0.100	ND	103	70-130	1.04	30	
Surrogate: 1,2-Dichloroethane-d4	0.0432		"	0.0400		108	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0297		"	0.0400		74.3	50-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGA0323 - EPA 3550A

Blank (BGA0323-BLK1)

Prepared & Analyzed: 01/13/23

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

Surrogate: o-Terphenyl	5.34		"	12.5	42.7	30-150
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LCS (BGA0323-BS1)

Prepared & Analyzed: 01/13/23

C10-C28 (DRO)	475	50	mg/kg	500	95.1	70-130
Surrogate: o-Terphenyl	16.5		"	12.5	132	30-150

Matrix Spike (BGA0323-MS1)

Source: 2301247-01

Prepared & Analyzed: 01/13/23

C10-C28 (DRO)	432	50	mg/kg	500	24.4	81.5	70-130
Surrogate: o-Terphenyl	14.2		"	12.5	113	30-150	

Matrix Spike Dup (BGA0323-MSD1)

Source: 2301247-01

Prepared & Analyzed: 01/13/23

C10-C28 (DRO)	448	50	mg/kg	500	24.4	84.8	70-130	3.77	20
Surrogate: o-Terphenyl	13.7		"	12.5	110	30-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0343 - EPA 5030 Soil MS

Blank (BGA0343-BLK1)

Prepared & Analyzed: 01/16/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0391		"	0.0333		117	40-150			
Surrogate: Fluoranthene-d10	0.0336		"	0.0333		101	40-150			

LCS (BGA0343-BS1)

Prepared & Analyzed: 01/16/23

Acenaphthene	0.0360	0.00500	mg/kg	0.0333		108	31-137			
Anthracene	0.0379	0.00500	"	0.0333		114	30-120			
Benzo (a) anthracene	0.0267	0.00500	"	0.0333		80.0	30-120			
Benzo (a) pyrene	0.0335	0.00500	"	0.0333		100	30-120			
Benzo (b) fluoranthene	0.0331	0.00500	"	0.0333		99.2	30-120			
Benzo (k) fluoranthene	0.0362	0.00500	"	0.0333		109	30-120			
Chrysene	0.0306	0.00500	"	0.0333		91.7	30-120			
Dibenz (a,h) anthracene	0.0344	0.00500	"	0.0333		103	30-120			
Fluoranthene	0.0309	0.00500	"	0.0333		92.8	30-120			
Fluorene	0.0314	0.00500	"	0.0333		94.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0338	0.00500	"	0.0333		101	30-120			
Pyrene	0.0297	0.00500	"	0.0333		89.1	35-142			
1-Methylnaphthalene	0.0298	0.00500	"	0.0333		89.5	35-142			
2-Methylnaphthalene	0.0321	0.00500	"	0.0333		96.3	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0324		"	0.0333		97.2	40-150			
Surrogate: Fluoranthene-d10	0.0353		"	0.0333		106	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0343 - EPA 5030 Soil MS

Matrix Spike (BGA0343-MS1)

Source: 2301259-01

Prepared & Analyzed: 01/16/23

Acenaphthene	0.0369	0.00500	mg/kg	0.0333	ND	111	31-137				
Anthracene	0.0337	0.00500	"	0.0333	ND	101	30-120				
Benzo (a) anthracene	0.0278	0.00500	"	0.0333	ND	83.5	30-120				
Benzo (a) pyrene	0.0303	0.00500	"	0.0333	ND	91.0	30-120				
Benzo (b) fluoranthene	0.0308	0.00500	"	0.0333	ND	92.5	30-120				
Benzo (k) fluoranthene	0.0314	0.00500	"	0.0333	ND	94.2	30-120				
Chrysene	0.0276	0.00500	"	0.0333	ND	82.7	30-120				
Dibenz (a,h) anthracene	0.0319	0.00500	"	0.0333	ND	95.8	30-120				
Fluoranthene	0.0355	0.00500	"	0.0333	ND	107	30-120				
Fluorene	0.0383	0.00500	"	0.0333	ND	115	30-120				
Indeno (1,2,3-cd) pyrene	0.0318	0.00500	"	0.0333	ND	95.4	30-120				
Pyrene	0.0261	0.00500	"	0.0333	ND	78.2	35-142				
1-Methylnaphthalene	0.0291	0.00500	"	0.0333	ND	87.2	15-130				
2-Methylnaphthalene	0.0284	0.00500	"	0.0333	ND	85.3	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0285		"	0.0333		85.5	40-150				
Surrogate: Fluoranthene-d10	0.0366		"	0.0333		110	40-150				

Matrix Spike Dup (BGA0343-MSD1)

Source: 2301259-01

Prepared & Analyzed: 01/16/23

Acenaphthene	0.0313	0.00500	mg/kg	0.0333	ND	93.8	31-137	16.4	30
Anthracene	0.0314	0.00500	"	0.0333	ND	94.3	30-120	6.89	30
Benzo (a) anthracene	0.0259	0.00500	"	0.0333	ND	77.8	30-120	7.02	30
Benzo (a) pyrene	0.0283	0.00500	"	0.0333	ND	85.0	30-120	6.88	30
Benzo (b) fluoranthene	0.0278	0.00500	"	0.0333	ND	83.3	30-120	10.5	30
Benzo (k) fluoranthene	0.0286	0.00500	"	0.0333	ND	85.8	30-120	9.31	30
Chrysene	0.0255	0.00500	"	0.0333	ND	76.4	30-120	7.90	30
Dibenz (a,h) anthracene	0.0307	0.00500	"	0.0333	ND	92.1	30-120	3.90	30
Fluoranthene	0.0374	0.00500	"	0.0333	ND	112	30-120	5.16	30
Fluorene	0.0312	0.00500	"	0.0333	ND	93.6	30-120	20.5	30
Indeno (1,2,3-cd) pyrene	0.0302	0.00500	"	0.0333	ND	90.7	30-120	5.06	30
Pyrene	0.0265	0.00500	"	0.0333	ND	79.5	35-142	1.74	30
1-Methylnaphthalene	0.0268	0.00500	"	0.0333	ND	80.3	15-130	8.30	50
2-Methylnaphthalene	0.0272	0.00500	"	0.0333	ND	81.6	15-130	4.49	50
Surrogate: 2-Methylnaphthalene-d10	0.0259		"	0.0333		77.7	40-150		
Surrogate: Fluoranthene-d10	0.0364		"	0.0333		109	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGA0334 - EPA 3050B

Blank (BGA0334-BLK1)

Prepared: 01/15/23 Analyzed: 01/16/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGA0334-BS1)

Prepared: 01/15/23 Analyzed: 01/16/23

Arsenic	82.3	0.200	mg/kg wet	80.0	103	80-120
Barium	79.0	0.400	"	80.0	98.8	80-120
Selenium	8.76	0.260	"	8.00	109	80-120

Duplicate (BGA0334-DUP1)

Source: 2301192-01

Prepared: 01/15/23 Analyzed: 01/16/23

Arsenic	1.44	0.200	mg/kg dry	1.12	24.5	20	QR-03
Barium	136	0.400	"	127	6.66	20	
Selenium	ND	0.260	"	0.387	200	20	QR-03

Matrix Spike (BGA0334-MS1)

Source: 2301192-01

Prepared: 01/15/23 Analyzed: 01/16/23

Arsenic	98.6	0.200	mg/kg dry	97.7	1.12	99.7	75-125
Barium	236	0.400	"	97.7	127	111	75-125
Selenium	9.85	0.260	"	9.77	0.387	96.9	75-125

Matrix Spike Dup (BGA0334-MSD1)

Source: 2301192-01

Prepared: 01/15/23 Analyzed: 01/16/23

Arsenic	93.3	0.200	mg/kg dry	97.7	1.12	94.4	75-125	5.48	25
Barium	237	0.400	"	97.7	127	113	75-125	0.580	25
Selenium	9.83	0.260	"	9.77	0.387	96.7	75-125	0.169	25

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

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

Summit Scientific

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

Batch BGA0326 - General Preparation

Duplicate (BGA0326-DUP1)

Source: 2301247-01

Prepared & Analyzed: 01/15/23

% Solids	84.6	%	84.4	0.233	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

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

Summit Scientific

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

Batch BGA0359 - General Preparation

LCS (BGA0359-BS1)

Prepared & Analyzed: 01/16/23

pH	9.12	pH Units	9.18	99.3	95-105
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Duplicate (BGA0359-DUP1)

Source: 2301253-01

Prepared & Analyzed: 01/16/23

pH	7.93	pH Units	8.10	2.12	20
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/20/23 15:31

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

January 23, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2301275

Enclosed are the results of analyses for samples received by Summit Scientific on 01/16/23 17:26. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS96@10'	2301275-01	Soil	01/16/23 08:29	01/16/23 17:26
SS97@12'	2301275-02	Soil	01/16/23 10:34	01/16/23 17:26
SS98@10'	2301275-03	Soil	01/16/23 14:47	01/16/23 17:26

Summit Scientific

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

Summit Scientific

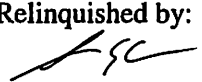
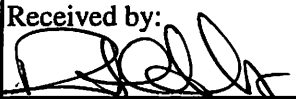
S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Werning 3,4-2 Tank Battery
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *			
1	SS96e10'	1/16/23	829	3			X			X				X	X	X		+	X	X		pH, EC, SAR by saturated paste
2	SS97e12'	↓	1034	↓			↓			↓				↓	↓	↓		↓	↓	↓		
3	SS98e10'	↓	1447	↓			↓			↓				↓	↓	↓		↓	↓	↓		
4																						
5																						
6																						
7																						
8																						
9																						
10	...																					

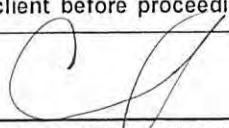
Relinquished by: 	Date/Time: 1/16/23 1618	Received by: Tasman's Lock Box	Date/Time: 1/16/23 1618	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours — 24 hours — Standard — 48 hours — Sample Integrity: Temperature Upon Receipt: 8.1 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes: * = just PH only * = PAHs = Chrysene, Fluorene, 1-m, 2-m * = metals = Arsenic, barium, Selenium.
Relinquished by: Tasman's Lock Box	Date/Time: 1/16/23 1726	Received by: 	Date/Time: 1/16/23 1726		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

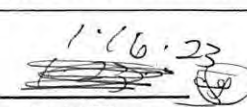
S₂

Sample Receipt Checklist

S2 Work Order# 2301275Client: Pocahontas Client Project ID: Werning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____
☐ ☒ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.1Thermometer # 1

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

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

 Custodian Printed Name


 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

SS96@10'
2301275-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/23 08:29**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Benzene	ND	0.0020			mg/kg	1	BGA0370	01/16/23	01/17/23	EPA 8260B	
Toluene	ND	0.0050			"	"	"	"	"	"	
Ethylbenzene	ND	0.0050			"	"	"	"	"	"	
Xylenes (total)	ND	0.010			"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050			"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050			"	"	"	"	"	"	
Naphthalene	ND	0.0038			"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50			"	"	"	"	"	"	

Date Sampled: **01/16/23 08:29**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Surrogate: 1,2-Dichloroethane-d4		133 %			50-150		"	"	"	"	
Surrogate: Toluene-d8		94.3 %			50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %			50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/23 08:29**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
C10-C28 (DRO)	ND	50			mg/kg	1	BGA0371	01/16/23	01/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50			"	"	"	"	"	"	

Date Sampled: **01/16/23 08:29**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Surrogate: o-Terphenyl		111 %			30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

SS96@10'
2301275-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/16/23 08:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGA0373	01/17/23	01/18/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/16/23 08:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		61.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		87.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/16/23 08:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGA0398	01/17/23	01/18/23	EPA 6020B	
Barium	5.52	0.400		"	"	"	"	"	"	
Selenium	0.511	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/16/23 08:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.3			%	1	BGA0412	01/17/23	01/18/23	Calculation	

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

Date Sampled: **01/16/23 08:29**

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

SS96@10'
2301275-01 (Soil)

Summit Scientific

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

pH	8.15	pH Units	1	BGA0405	01/17/23	01/19/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

SS97@12'
2301275-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/23 10:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0370	01/16/23	01/17/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/16/23 10:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		133 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/23 10:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0371	01/16/23	01/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/16/23 10:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		112 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

SS97@12'
2301275-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/16/23 10:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0373	01/17/23	01/18/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/16/23 10:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		68.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		91.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/16/23 10:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0398	01/17/23	01/18/23	EPA 6020B	
Barium	5.69	0.400		"	"	"	"	"	"	
Selenium	0.284	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/16/23 10:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.4			%	1	BGA0412	01/17/23	01/18/23	Calculation	

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

Date Sampled: **01/16/23 10:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

SS97@12'
2301275-02 (Soil)

Summit Scientific

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

pH	7.78	pH Units	1	BGA0405	01/17/23	01/19/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

SS98@10'
2301275-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/16/23 14:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0370	01/16/23	01/17/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/16/23 14:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		127 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		93.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/16/23 14:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0371	01/16/23	01/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/16/23 14:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		117 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

SS98@10'
2301275-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/16/23 14:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0373	01/17/23	01/18/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/16/23 14:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		62.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		86.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/16/23 14:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0398	01/17/23	01/18/23	EPA 6020B	
Barium	5.10	0.400		"	"	"	"	"	"	
Selenium	0.198	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/16/23 14:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.5			%	1	BGA0412	01/17/23	01/18/23	Calculation	

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

Date Sampled: **01/16/23 14:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

SS98@10'
2301275-03 (Soil)

Summit Scientific

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

pH	7.49	pH Units	1	BGA0405	01/17/23	01/19/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGA0370 - EPA 5030 Soil MS

Blank (BGA0370-BLK1)

Prepared: 01/16/23 Analyzed: 01/17/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0527		"	0.0400		132	50-150			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		101	50-150			

LCS (BGA0370-BS1)

Prepared: 01/16/23 Analyzed: 01/17/23

Benzene	0.0835	0.0020	mg/kg	0.100		83.5	70-130			
Toluene	0.0811	0.0050	"	0.100		81.1	70-130			
Ethylbenzene	0.108	0.0050	"	0.100		108	70-130			
m,p-Xylene	0.204	0.010	"	0.200		102	70-130			
o-Xylene	0.102	0.0050	"	0.100		102	70-130			
1,2,4-Trimethylbenzene	0.0977	0.0050	"	0.100		97.7	70-130			
1,3,5-Trimethylbenzene	0.0958	0.0050	"	0.100		95.8	70-130			
Naphthalene	0.108	0.0038	"	0.100		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0530		"	0.0400		133	50-150			
Surrogate: Toluene-d8	0.0380		"	0.0400		95.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		95.9	50-150			

Matrix Spike (BGA0370-MS1)

Source: 2301278-01

Prepared: 01/16/23 Analyzed: 01/17/23

Benzene	0.0839	0.0020	mg/kg	0.100	ND	83.9	70-130			
Toluene	0.0828	0.0050	"	0.100	ND	82.8	70-130			
Ethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130			
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130			
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130			
1,2,4-Trimethylbenzene	0.0967	0.0050	"	0.100	ND	96.7	70-130			
1,3,5-Trimethylbenzene	0.0936	0.0050	"	0.100	ND	93.6	70-130			
Naphthalene	0.0996	0.0038	"	0.100	ND	99.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0539		"	0.0400		135	50-150			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.1	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGA0370 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0370-MSD1)	Source: 2301278-01			Prepared: 01/16/23 Analyzed: 01/17/23						
Benzene	0.0847	0.0020	mg/kg	0.100	ND	84.7	70-130	0.925	30	
Toluene	0.0842	0.0050	"	0.100	ND	84.2	70-130	1.65	30	
Ethylbenzene	0.113	0.0050	"	0.100	ND	113	70-130	5.32	30	
m,p-Xylene	0.242	0.010	"	0.200	ND	121	70-130	15.4	30	
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130	3.56	30	
1,2,4-Trimethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130	22.5	30	
1,3,5-Trimethylbenzene	0.123	0.0050	"	0.100	ND	123	70-130	27.0	30	
Naphthalene	0.123	0.0038	"	0.100	ND	123	70-130	20.7	30	
Surrogate: 1,2-Dichloroethane-d4	0.0560		"	0.0400		140	50-150			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	50-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGA0371 - EPA 3550A

Blank (BGA0371-BLK1)

Prepared: 01/16/23 Analyzed: 01/17/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	7.96		"	12.5		63.7	30-150			

LCS (BGA0371-BS1)

Prepared: 01/16/23 Analyzed: 01/17/23

C10-C28 (DRO)	415	50	mg/kg	500		83.0	70-130			
Surrogate: o-Terphenyl	7.45		"	12.5		59.6	30-150			

Matrix Spike (BGA0371-MS1)

Source: 2301278-01

Prepared: 01/16/23 Analyzed: 01/17/23

C10-C28 (DRO)	398	50	mg/kg	500	ND	79.6	70-130			
Surrogate: o-Terphenyl	8.16		"	12.5		65.3	30-150			

Matrix Spike Dup (BGA0371-MSD1)

Source: 2301278-01

Prepared: 01/16/23 Analyzed: 01/17/23

C10-C28 (DRO)	423	50	mg/kg	500	ND	84.6	70-130	6.04	20	
Surrogate: o-Terphenyl	7.70		"	12.5		61.6	30-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0373 - EPA 5030 Soil MS

Blank (BGA0373-BLK1)

Prepared & Analyzed: 01/17/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0315		"	0.0333		94.5		40-150			
Surrogate: Fluoranthene-d10	0.0349		"	0.0333		105		40-150			

LCS (BGA0373-BS1)

Prepared & Analyzed: 01/17/23

Acenaphthene	0.0375	0.00500	mg/kg	0.0333		112		31-137			
Anthracene	0.0371	0.00500	"	0.0333		111		30-120			
Benzo (a) anthracene	0.0345	0.00500	"	0.0333		104		30-120			
Benzo (a) pyrene	0.0354	0.00500	"	0.0333		106		30-120			
Benzo (b) fluoranthene	0.0363	0.00500	"	0.0333		109		30-120			
Benzo (k) fluoranthene	0.0372	0.00500	"	0.0333		112		30-120			
Chrysene	0.0356	0.00500	"	0.0333		107		30-120			
Dibenz (a,h) anthracene	0.0328	0.00500	"	0.0333		98.5		30-120			
Fluoranthene	0.0318	0.00500	"	0.0333		95.3		30-120			
Fluorene	0.0374	0.00500	"	0.0333		112		30-120			
Indeno (1,2,3-cd) pyrene	0.0354	0.00500	"	0.0333		106		30-120			
Pyrene	0.0264	0.00500	"	0.0333		79.3		35-142			
1-Methylnaphthalene	0.0369	0.00500	"	0.0333		111		35-142			
2-Methylnaphthalene	0.0366	0.00500	"	0.0333		110		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0304		"	0.0333		91.2		40-150			
Surrogate: Fluoranthene-d10	0.0387		"	0.0333		116		40-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0373 - EPA 5030 Soil MS

Matrix Spike (BGA0373-MS1)

Source: 2301241-01

Prepared & Analyzed: 01/17/23

Acenaphthene	0.0237	0.00500	mg/kg	0.0333	ND	71.1	31-137		
Anthracene	0.0239	0.00500	"	0.0333	ND	71.6	30-120		
Benzo (a) anthracene	0.0245	0.00500	"	0.0333	ND	73.5	30-120		
Benzo (a) pyrene	0.0249	0.00500	"	0.0333	0.00186	69.0	30-120		
Benzo (b) fluoranthene	0.0262	0.00500	"	0.0333	ND	78.7	30-120		
Benzo (k) fluoranthene	0.0239	0.00500	"	0.0333	0.00206	65.7	30-120		
Chrysene	0.0244	0.00500	"	0.0333	ND	73.2	30-120		
Dibenz (a,h) anthracene	0.0187	0.00500	"	0.0333	ND	56.1	30-120		
Fluoranthene	0.0207	0.00500	"	0.0333	ND	62.0	30-120		
Fluorene	0.0237	0.00500	"	0.0333	ND	71.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0238	0.00500	"	0.0333	0.00197	65.5	30-120		
Pyrene	0.0188	0.00500	"	0.0333	ND	56.3	35-142		
1-Methylnaphthalene	0.0257	0.00500	"	0.0333	ND	77.1	15-130		
2-Methylnaphthalene	0.0273	0.00500	"	0.0333	ND	81.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0242		"	0.0333		72.6	40-150		
Surrogate: Fluoranthene-d10	0.0252		"	0.0333		75.5	40-150		

Matrix Spike Dup (BGA0373-MSD1)

Source: 2301241-01

Prepared & Analyzed: 01/17/23

Acenaphthene	0.0236	0.00500	mg/kg	0.0333	ND	70.9	31-137	0.282	30
Anthracene	0.0233	0.00500	"	0.0333	ND	69.8	30-120	2.54	30
Benzo (a) anthracene	0.0247	0.00500	"	0.0333	ND	74.1	30-120	0.809	30
Benzo (a) pyrene	0.0235	0.00500	"	0.0333	0.00186	64.8	30-120	5.71	30
Benzo (b) fluoranthene	0.0251	0.00500	"	0.0333	ND	75.2	30-120	4.57	30
Benzo (k) fluoranthene	0.0234	0.00500	"	0.0333	0.00206	64.0	30-120	2.29	30
Chrysene	0.0244	0.00500	"	0.0333	ND	73.2	30-120	0.0464	30
Dibenz (a,h) anthracene	0.0184	0.00500	"	0.0333	ND	55.2	30-120	1.57	30
Fluoranthene	0.0196	0.00500	"	0.0333	ND	58.7	30-120	5.48	30
Fluorene	0.0237	0.00500	"	0.0333	ND	71.0	30-120	0.186	30
Indeno (1,2,3-cd) pyrene	0.0229	0.00500	"	0.0333	0.00197	62.8	30-120	3.89	30
Pyrene	0.0187	0.00500	"	0.0333	ND	56.0	35-142	0.693	30
1-Methylnaphthalene	0.0242	0.00500	"	0.0333	ND	72.7	15-130	5.89	50
2-Methylnaphthalene	0.0261	0.00500	"	0.0333	ND	78.2	15-130	4.58	50
Surrogate: 2-Methylnaphthalene-d10	0.0217		"	0.0333		65.2	40-150		
Surrogate: Fluoranthene-d10	0.0254		"	0.0333		76.3	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGA0398 - EPA 3050B

Blank (BGA0398-BLK1)

Prepared: 01/17/23 Analyzed: 01/18/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGA0398-BS1)

Prepared: 01/17/23 Analyzed: 01/18/23

Arsenic	45.8	0.200	mg/kg wet	40.0	115	80-120
Barium	42.6	0.400	"	40.0	107	80-120
Selenium	4.10	0.260	"	4.00	102	80-120

Duplicate (BGA0398-DUP1)

Source: 2301275-01

Prepared: 01/17/23 Analyzed: 01/18/23

Arsenic	ND	0.200	mg/kg dry	ND			20
Barium	4.62	0.400	"	5.52		17.8	20
Selenium	0.548	0.260	"	0.511		6.91	20

Matrix Spike (BGA0398-MS1)

Source: 2301275-01

Prepared: 01/17/23 Analyzed: 01/18/23

Arsenic	39.0	0.200	mg/kg dry	49.2	ND	79.2	75-125	
Barium	38.1	0.400	"	49.2	5.52	66.2	75-125	QM-05
Selenium	5.07	0.260	"	4.92	0.511	92.6	75-125	

Matrix Spike Dup (BGA0398-MSD1)

Source: 2301275-01

Prepared: 01/17/23 Analyzed: 01/18/23

Arsenic	48.7	0.200	mg/kg dry	49.2	ND	98.9	75-125	22.2	25
Barium	81.3	0.400	"	49.2	5.52	154	75-125	72.3	25
Selenium	6.18	0.260	"	4.92	0.511	115	75-125	19.7	25

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

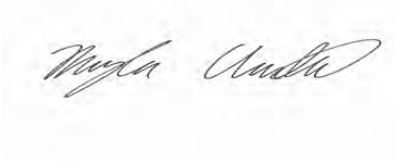
Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch BGA0412 - General Preparation

Duplicate (BGA0412-DUP1)		Source: 2301161-01		Prepared: 01/17/23 Analyzed: 01/18/23						
% Solids	90.2		%		90.3			0.208	20	

Summit Scientific



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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/23/23 11:24

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

Summit Scientific

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

Batch BGA0405 - General Preparation

LCS (BGA0405-BS1)

Prepared: 01/17/23 Analyzed: 01/19/23

pH	9.04	pH Units	9.18	98.5	95-105
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Duplicate (BGA0405-DUP1)

Source: 2301275-01

Prepared: 01/17/23 Analyzed: 01/19/23

pH	7.75	pH Units	8.15	5.03	20
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Summit Scientific

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



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/23/23 11:24

Notes and Definitions

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 01, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2301350

Enclosed are the results of analyses for samples received by Summit Scientific on 01/20/23 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS99@12'	2301350-01	Soil	01/20/23 08:48	01/20/23 18:00
SS102@12'	2301350-02	Soil	01/20/23 11:12	01/20/23 18:00
SS103@12'	2301350-03	Soil	01/20/23 11:38	01/20/23 18:00
SS104@12'	2301350-04	Soil	01/20/23 13:51	01/20/23 18:00
SS105@12'	2301350-05	Soil	01/20/23 15:00	01/20/23 18:00
SS100@2.5'	2301350-06	Soil	01/20/23 08:55	01/20/23 18:00
SS101@2.5'	2301350-07	Soil	01/20/23 09:00	01/20/23 18:00

Summit Scientific

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

Summit Scientific

S₂

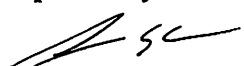

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

2301380.1

Page 1 of 2

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: warning 3,4-2 Tank Battery
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *			
1	SS99 e12'	1/20/23	848	3			X			X				X	X	X		X	X	X		pH, EC, SAR by saturated paste
2	SS102 e12'		1112																			
3	SS103 e12'		1138																			
4	SS104 e12'		1351																			
5	SS106 e12'		1500																			
6																						
7																						
8																						
9																						
10	...																					

Relinquished by: 	Date/Time: 1/20/23 1610	Received by: Tasman's Lock Box	Date/Time: 1/20/23 1610	Turn Around Time (Check)	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 1/20/23 1800	Received by: 	Date/Time: 1/20/23 1800	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/>	* = pH only * = PAHs = chrysene, naphthalene, fluorene, 1-m, 2-m.
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 1.2 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	* = metals = Arsenic, barium, selenium.

Summit Scientific

S₂

230/350.2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 2 of 2

Client:	PDC / Tasman	Project Manager:	Mark Longhurst
Address:	6855 W 119th Ave	E-Mail:	mark.longhurst@PDCE.com
City/State/Zip:	Broomfield/ CO/ 80020		
Phone:	303-487-1228	Project Name:	Warning 3,4-2 Tank Battery
Sampler Name:	Sam Anderson	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAHs	Metals		
1	SS100e2.5'	1/20/23	855	1			X			X					X	X			pH, EC, SAR by saturated paste		
2	SS101e2.5'	↓	900	1			↓			↓					X	X					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10	...																				

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
<i>[Signature]</i>	1/20/23 1610	Tasman's Lock Box	1/20/23 1610	Same Day	72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	1/20/23 1800	<i>[Signature]</i>	1/20/23 1800	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	Temperature Upon Receipt:	
				Samples Intact: Yes	No	



Sample Receipt Checklist

S2 Work Order# 2301350Client: PDC / asman Client Project ID: Werring 3-4-2 Tank Battery


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

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

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 1.2 Thermometer # 02

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

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.
Custodian Printed Name1-20-23 1800
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS99@12'
2301350-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/23 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0516	01/21/23	01/22/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/20/23 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/20/23 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0517	"	01/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/20/23 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		126 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS99@12'
2301350-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/20/23 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0532	01/23/23	01/24/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/20/23 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		50.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/20/23 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0520	01/20/23	01/23/23	EPA 6020B	
Barium	16.2	0.400		"	"	"	"	"	"	
Selenium	0.448	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/20/23 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.2			%	1	BGA0528	01/22/23	01/22/23	Calculation	

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

Date Sampled: **01/20/23 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS99@12'
2301350-01 (Soil)

Summit Scientific

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

pH	7.99	pH Units	1	BGA0547	01/23/23	01/23/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS102@12'
2301350-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0516	01/21/23	01/22/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/20/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		114 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/20/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0517	"	01/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/20/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		113 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS102@12'
2301350-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/20/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0532	01/23/23	01/24/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/20/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		52.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		80.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/20/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0520	01/20/23	01/23/23	EPA 6020B	
Barium	3.71	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/20/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	90.2			%	1	BGA0528	01/22/23	01/22/23	Calculation	

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

Date Sampled: **01/20/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/01/23 09:54

SS102@12'
2301350-02 (Soil)

Summit Scientific

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

pH	7.92	pH Units	1	BGA0547	01/23/23	01/23/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS103@12'
2301350-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/23 11:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0516	01/21/23	01/22/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/20/23 11:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		93.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/20/23 11:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0517	"	01/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/20/23 11:38**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS103@12'
2301350-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/20/23 11:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0532	01/23/23	01/24/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/20/23 11:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		58.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		83.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/20/23 11:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0520	01/20/23	01/23/23	EPA 6020B	
Barium	3.88	0.400		"	"	"	"	"	"	
Selenium	0.211	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/20/23 11:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	97.8			%	1	BGA0528	01/22/23	01/22/23	Calculation	

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

Date Sampled: **01/20/23 11:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/01/23 09:54

SS103@12'
2301350-03 (Soil)

Summit Scientific

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

pH	7.78	pH Units	1	BGA0547	01/23/23	01/23/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS104@12'
2301350-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/23 13:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0516	01/21/23	01/22/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/20/23 13:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		86.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.9 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/20/23 13:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0517	"	01/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/20/23 13:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		124 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS104@12'
2301350-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/20/23 13:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGA0532	01/23/23	01/24/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/20/23 13:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		60.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		89.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/20/23 13:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGA0520	01/20/23	01/23/23	EPA 6020B	
Barium	4.87	0.400		"	"	"	"	"	"	
Selenium	0.283	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/20/23 13:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.3			%	1	BGA0528	01/22/23	01/22/23	Calculation	

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

Date Sampled: **01/20/23 13:51**

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

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/01/23 09:54

SS104@12'
2301350-04 (Soil)

Summit Scientific

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

pH	7.67	pH Units	1	BGA0547	01/23/23	01/23/23	EPA 9045D
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Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS105@12'
2301350-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/23 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0516	01/21/23	01/22/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/20/23 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		101 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/20/23 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0517	"	01/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/20/23 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		115 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS105@12'
2301350-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/20/23 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0532	01/23/23	01/24/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/20/23 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		61.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		91.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/20/23 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.234	0.200		mg/kg dry	1	BGA0520	01/20/23	01/23/23	EPA 6020B	
Barium	16.7	0.400		"	"	"	"	"	"	
Selenium	0.459	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/20/23 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.6			%	1	BGA0528	01/22/23	01/22/23	Calculation	

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

Date Sampled: **01/20/23 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/01/23 09:54

SS105@12'
2301350-05 (Soil)

Summit Scientific

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

pH	7.60	pH Units	1	BGA0547	01/23/23	01/23/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS100@2.5'
2301350-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/20/23 08:55**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Boron	0.702	0.0100			mg/L	1	BGA0526	01/22/23	01/23/23	EPA 6020B	

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

Date Sampled: **01/20/23 08:55**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Calcium	256	0.0624			mg/L dry	1	BGA0519	01/20/23	01/22/23	EPA 6020B	
Magnesium	130	0.0624			"	"	"	"	"	"	
Sodium	256	0.0624			"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/20/23 08:55**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Sodium Adsorption Ratio	3.25	0.00100			units	1	BGA0544	01/23/23	01/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/20/23 08:55**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
% Solids	80.1				%	1	BGA0528	01/22/23	01/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/20/23 08:55**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Specific Conductance (EC)	3.74	0.0100			mmhos/cm	1	BGA0524	01/22/23	01/22/23	EPA 120.1	

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS100@2.5'
2301350-06 (Soil)

Summit Scientific

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

Date Sampled: **01/20/23 08:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.65			pH Units	1	BGA0523	01/22/23	01/22/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS101@2.5'
2301350-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/20/23 09:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0402	0.0100		mg/L	1	BGA0526	01/22/23	01/23/23	EPA 6020B	

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

Date Sampled: **01/20/23 09:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	38.8	0.0522		mg/L dry	1	BGA0519	01/20/23	01/22/23	EPA 6020B	
Magnesium	9.79	0.0522		"	"	"	"	"	"	
Sodium	35.3	0.0522		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/20/23 09:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.31	0.00100		units	1	BGA0544	01/23/23	01/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/20/23 09:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.7			%	1	BGA0528	01/22/23	01/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/20/23 09:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.662	0.0100		mmhos/cm	1	BGA0524	01/22/23	01/22/23	EPA 120.1	

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

SS101@2.5'
2301350-07 (Soil)

Summit Scientific

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

Date Sampled: **01/20/23 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.95			pH Units	1	BGA0523	01/22/23	01/22/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGA0516 - EPA 5030 Soil MS

Blank (BGA0516-BLK1)

Prepared & Analyzed: 01/21/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0465		"	0.0400		116	50-150			
Surrogate: Toluene-d8	0.0576		"	0.0400		144	50-150			
Surrogate: 4-Bromofluorobenzene	0.0542		"	0.0400		136	50-150			

LCS (BGA0516-BS1)

Prepared & Analyzed: 01/21/23

Benzene	0.100	0.0020	mg/kg	0.100		100	70-130			
Toluene	0.103	0.0050	"	0.100		103	70-130			
Ethylbenzene	0.0886	0.0050	"	0.100		88.6	70-130			
m,p-Xylene	0.191	0.010	"	0.200		95.3	70-130			
o-Xylene	0.0970	0.0050	"	0.100		97.0	70-130			
1,2,4-Trimethylbenzene	0.0975	0.0050	"	0.100		97.5	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.0909	0.0038	"	0.100		90.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0436		"	0.0400		109	50-150			
Surrogate: Toluene-d8	0.0523		"	0.0400		131	50-150			
Surrogate: 4-Bromofluorobenzene	0.0439		"	0.0400		110	50-150			

Matrix Spike (BGA0516-MS1)

Source: 2301342-01

Prepared & Analyzed: 01/21/23

Benzene	0.0994	0.0020	mg/kg	0.100	ND	99.4	70-130			
Toluene	0.0709	0.0050	"	0.100	ND	70.9	70-130			
Ethylbenzene	0.0825	0.0050	"	0.100	ND	82.5	70-130			
m,p-Xylene	0.164	0.010	"	0.200	ND	82.1	70-130			
o-Xylene	0.0819	0.0050	"	0.100	ND	81.9	70-130			
1,2,4-Trimethylbenzene	0.0754	0.0050	"	0.100	ND	75.4	70-130			
1,3,5-Trimethylbenzene	0.0743	0.0050	"	0.100	ND	74.3	70-130			
Naphthalene	0.0938	0.0038	"	0.100	ND	93.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0275		"	0.0400		68.8	50-150			
Surrogate: Toluene-d8	0.0355		"	0.0400		88.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0367		"	0.0400		91.7	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGA0516 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0516-MSD1)	Source: 2301342-01			Prepared & Analyzed: 01/21/23						
Benzene	0.105	0.0020	mg/kg	0.100	ND	105	70-130	5.21	30	
Toluene	0.0761	0.0050	"	0.100	ND	76.1	70-130	7.14	30	
Ethylbenzene	0.0844	0.0050	"	0.100	ND	84.4	70-130	2.26	30	
m,p-Xylene	0.170	0.010	"	0.200	ND	84.9	70-130	3.32	30	
o-Xylene	0.0853	0.0050	"	0.100	ND	85.3	70-130	4.06	30	
1,2,4-Trimethylbenzene	0.0797	0.0050	"	0.100	ND	79.7	70-130	5.49	30	
1,3,5-Trimethylbenzene	0.0779	0.0050	"	0.100	ND	77.9	70-130	4.77	30	
Naphthalene	0.100	0.0038	"	0.100	ND	100	70-130	6.53	30	
Surrogate: 1,2-Dichloroethane-d4	0.0333		"	0.0400		83.2	50-150			
Surrogate: Toluene-d8	0.0377		"	0.0400		94.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGA0517 - EPA 3550A

Blank (BGA0517-BLK1)

Prepared & Analyzed: 01/21/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.6		"	12.5	101	30-150				

LCS (BGA0517-BS1)

Prepared & Analyzed: 01/21/23

C10-C28 (DRO)	613	50	mg/kg	500	123	70-130				
Surrogate: o-Terphenyl	12.8		"	12.5	102	30-150				

Matrix Spike (BGA0517-MS1)

Source: 2301342-01

Prepared & Analyzed: 01/21/23

C10-C28 (DRO)	593	50	mg/kg	500	34.7	112	70-130			
Surrogate: o-Terphenyl	13.6		"	12.5	109	30-150				

Matrix Spike Dup (BGA0517-MSD1)

Source: 2301342-01

Prepared & Analyzed: 01/21/23

C10-C28 (DRO)	589	50	mg/kg	500	34.7	111	70-130	0.645	20	
Surrogate: o-Terphenyl	13.5		"	12.5	108	30-150				

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0532 - EPA 5030 Soil MS

Blank (BGA0532-BLK1)

Prepared & Analyzed: 01/23/23

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0171	"	0.0333	51.2	40-150
Surrogate: Fluoranthene-d10	0.0285	"	0.0333	85.5	40-150

LCS (BGA0532-BS1)

Prepared & Analyzed: 01/23/23

Acenaphthene	0.0300	0.00500	mg/kg	0.0333	89.9	31-137
Anthracene	0.0297	0.00500	"	0.0333	89.2	30-120
Benzo (a) anthracene	0.0259	0.00500	"	0.0333	77.6	30-120
Benzo (a) pyrene	0.0260	0.00500	"	0.0333	77.9	30-120
Benzo (b) fluoranthene	0.0272	0.00500	"	0.0333	81.5	30-120
Benzo (k) fluoranthene	0.0311	0.00500	"	0.0333	93.2	30-120
Chrysene	0.0313	0.00500	"	0.0333	93.9	30-120
Dibenz (a,h) anthracene	0.0232	0.00500	"	0.0333	69.5	30-120
Fluoranthene	0.0291	0.00500	"	0.0333	87.2	30-120
Fluorene	0.0295	0.00500	"	0.0333	88.6	30-120
Indeno (1,2,3-cd) pyrene	0.0239	0.00500	"	0.0333	71.8	30-120
Pyrene	0.0306	0.00500	"	0.0333	91.7	35-142
1-Methylnaphthalene	0.0264	0.00500	"	0.0333	79.2	35-142
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	62.9	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0290	"	0.0333	86.9	40-150
Surrogate: Fluoranthene-d10	0.0302	"	0.0333	90.5	40-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGA0532 - EPA 5030 Soil MS

Matrix Spike (BGA0532-MS1)

Source: 2301134-02

Prepared & Analyzed: 01/23/23

Acenaphthene	0.0203	0.00500	mg/kg	0.0333	ND	61.0	31-137				
Anthracene	0.0205	0.00500	"	0.0333	ND	61.4	30-120				
Benzo (a) anthracene	0.0212	0.00500	"	0.0333	ND	63.5	30-120				
Benzo (a) pyrene	0.0204	0.00500	"	0.0333	ND	61.3	30-120				
Benzo (b) fluoranthene	0.0183	0.00500	"	0.0333	ND	55.0	30-120				
Benzo (k) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.3	30-120				
Chrysene	0.0207	0.00500	"	0.0333	ND	62.1	30-120				
Dibenz (a,h) anthracene	0.0200	0.00500	"	0.0333	ND	60.1	30-120				
Fluoranthene	0.0214	0.00500	"	0.0333	ND	64.1	30-120				
Fluorene	0.0206	0.00500	"	0.0333	ND	61.9	30-120				
Indeno (1,2,3-cd) pyrene	0.0211	0.00500	"	0.0333	ND	63.3	30-120				
Pyrene	0.0213	0.00500	"	0.0333	ND	64.0	35-142				
1-Methylnaphthalene	0.0192	0.00500	"	0.0333	ND	57.7	15-130				
2-Methylnaphthalene	0.0175	0.00500	"	0.0333	ND	52.5	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0206		"	0.0333		61.8	40-150				
Surrogate: Fluoranthene-d10	0.0224		"	0.0333		67.2	40-150				

Matrix Spike Dup (BGA0532-MSD1)

Source: 2301134-02

Prepared & Analyzed: 01/23/23

Acenaphthene	0.0192	0.00500	mg/kg	0.0333	ND	57.7	31-137	5.66	30		
Anthracene	0.0179	0.00500	"	0.0333	ND	53.6	30-120	13.6	30		
Benzo (a) anthracene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	9.17	30		
Benzo (a) pyrene	0.0180	0.00500	"	0.0333	ND	54.1	30-120	12.5	30		
Benzo (b) fluoranthene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	12.6	30		
Benzo (k) fluoranthene	0.0167	0.00500	"	0.0333	ND	50.0	30-120	15.3	30		
Chrysene	0.0185	0.00500	"	0.0333	ND	55.5	30-120	11.3	30		
Dibenz (a,h) anthracene	0.0193	0.00500	"	0.0333	ND	57.8	30-120	3.96	30		
Fluoranthene	0.0188	0.00500	"	0.0333	ND	56.4	30-120	12.7	30		
Fluorene	0.0194	0.00500	"	0.0333	ND	58.2	30-120	6.18	30		
Indeno (1,2,3-cd) pyrene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	8.50	30		
Pyrene	0.0186	0.00500	"	0.0333	ND	55.9	35-142	13.6	30		
1-Methylnaphthalene	0.0167	0.00500	"	0.0333	ND	50.0	15-130	14.1	50		
2-Methylnaphthalene	0.0162	0.00500	"	0.0333	ND	48.5	15-130	8.05	50		
Surrogate: 2-Methylnaphthalene-d10	0.0174		"	0.0333		52.2	40-150				
Surrogate: Fluoranthene-d10	0.0201		"	0.0333		60.3	40-150				

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

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

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

Batch BGA0526 - EPA 3050B

Blank (BGA0526-BLK1)

Prepared: 01/22/23 Analyzed: 01/23/23

Boron ND 0.0100 mg/L

LCS (BGA0526-BS1)

Prepared: 01/22/23 Analyzed: 01/23/23

Boron 5.06 0.0100 mg/L 5.00 101 80-120

Duplicate (BGA0526-DUP1)

Source: 2301134-02

Prepared: 01/22/23 Analyzed: 01/23/23

Boron 0.379 0.0100 mg/L 0.348 8.56 20

Matrix Spike (BGA0526-MS1)

Source: 2301134-02

Prepared: 01/22/23 Analyzed: 01/23/23

Boron 5.33 0.0100 mg/L 5.00 0.348 99.7 75-125

Matrix Spike Dup (BGA0526-MSD1)

Source: 2301134-02

Prepared: 01/22/23 Analyzed: 01/23/23

Boron 5.35 0.0100 mg/L 5.00 0.348 100 75-125 0.337 25

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGA0520 - EPA 3050B

Blank (BGA0520-BLK1)

Prepared: 01/20/23 Analyzed: 01/23/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGA0520-BS1)

Prepared: 01/20/23 Analyzed: 01/23/23

Arsenic	43.4	0.200	mg/kg wet	40.0	109	80-120
Barium	48.0	0.400	"	40.0	120	80-120
Selenium	4.78	0.260	"	4.00	119	80-120

Duplicate (BGA0520-DUP1)

Source: 2301134-02

Prepared: 01/20/23 Analyzed: 01/23/23

Arsenic	2.85	0.200	mg/kg dry	2.68	6.21	20
Barium	58.2	0.400	"	51.0	13.1	20
Selenium	0.458	0.260	"	0.405	12.4	20

Matrix Spike (BGA0520-MS1)

Source: 2301134-02

Prepared: 01/20/23 Analyzed: 01/23/23

Arsenic	57.1	0.200	mg/kg dry	44.1	2.68	123	75-125
Barium	112	0.400	"	44.1	51.0	139	75-125
Selenium	4.96	0.260	"	4.41	0.405	103	75-125

QM-05

Matrix Spike Dup (BGA0520-MSD1)

Source: 2301134-02

Prepared: 01/20/23 Analyzed: 01/23/23

Arsenic	54.9	0.200	mg/kg dry	44.1	2.68	118	75-125	3.95	25
Barium	98.5	0.400	"	44.1	51.0	108	75-125	13.0	25
Selenium	4.68	0.260	"	4.41	0.405	97.0	75-125	5.71	25

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

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

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

Batch BGA0519 - General Preparation

Blank (BGA0519-BLK1)

Prepared: 01/20/23 Analyzed: 01/22/23

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

LCS (BGA0519-BS1)

Prepared: 01/20/23 Analyzed: 01/22/23

Calcium	5.23	0.0500	mg/L wet	5.00	105	70-130
Magnesium	5.03	0.0500	"	5.00	101	70-130
Sodium	4.98	0.0500	"	5.00	99.6	70-130

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch BGA0528 - General Preparation

Duplicate (BGA0528-DUP1)		Source: 2301134-02		Prepared & Analyzed: 01/22/23							
% Solids	90.8		%		90.7			0.114		20	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BGA0524 - General Preparation

Blank (BGA0524-BLK1)

Prepared & Analyzed: 01/22/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0524-BS1)

Prepared & Analyzed: 01/22/23

Specific Conductance (EC) 0.143 0.0100 mmhos/cm 0.150 95.3 95-105

Duplicate (BGA0524-DUP1)

Source: 2301344-01

Prepared & Analyzed: 01/22/23

Specific Conductance (EC) 0.651 0.0100 mmhos/cm 0.656 0.704 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 09:54

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BGA0523 - General Preparation

LCS (BGA0523-BS1)

Prepared & Analyzed: 01/22/23

pH	9.14		pH Units	9.18		99.6	95-105		
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Duplicate (BGA0523-DUP1)

Source: 2301344-01

Prepared & Analyzed: 01/22/23

pH	7.77		pH Units		7.82			0.641	20
----	------	--	----------	--	------	--	--	-------	----

Batch BGA0547 - General Preparation

LCS (BGA0547-BS1)

Prepared & Analyzed: 01/23/23

pH	9.19		pH Units	9.18		100	95-105		
----	------	--	----------	------	--	-----	--------	--	--

Duplicate (BGA0547-DUP1)

Source: 2301350-01

Prepared & Analyzed: 01/23/23

pH	8.03		pH Units		7.99			0.499	20
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Summit Scientific

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



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/01/23 09:54

Notes and Definitions

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

January 26, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2301384

Enclosed are the results of analyses for samples received by Summit Scientific on 01/23/23 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS106@12'	2301384-01	Soil	01/23/23 08:30	01/23/23 18:00
SS107@10'	2301384-02	Soil	01/23/23 09:40	01/23/23 18:00
SS108@12'	2301384-03	Soil	01/23/23 11:50	01/23/23 18:00
SS109@12'	2301384-04	Soil	01/23/23 13:13	01/23/23 18:00
SS110@12'	2301384-05	Soil	01/23/23 14:43	01/23/23 18:00
SS111@12'	2301384-06	Soil	01/23/23 15:08	01/23/23 18:00

Summit Scientific

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

Summit Scientific



S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Warning 3, 4-2 Tank Battery
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *		
1	SS106 c 12'	1/23/23	830	3			X			X				X	X	X		X	X	X	pH, EC, SAR by saturated paste
2	SS107 c 10'		940																		
3	SS108 c 12'		1150																		
4	SS109 c 12'		1313																		
5	SS110 c 12'	↓	1443	↓			↓			↓				↓	↓	↓		↓	↓	↓	
6	SS111 c 12'	↓	1508	↓			↓			↓				↓	↓	↓		↓	↓	↓	
7																					
8																					
9																					
10	...																				

Relinquished by: 	Date/Time: 1/23/23 1615	Received by: Tasman's Lock Box	Date/Time: 1/23/23 1615	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours 48 hours	Standard	Notes: * = pH only * = PAHs = Chrysene, Pyrene, Fluorene, 1-m, 2-m. * = metals = Arsenic, barium, selenium.
Relinquished by: Tasman's Lock Box	Date/Time: 1/23/23 1800	Received by: 	Date/Time: 1/23/23 1800	Sample Integrity:		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 0.5	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

Sample Receipt Checklist

S2 Work Order# 2301384Client: PDC / Tasman Client Project ID: Werning 3, 4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____
☒ ☒ ☐ ☐ ☐

SB

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 0.5 Thermometer # 1

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

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

Amanda Stilwell
 Custodian Printed Name

1/23/23
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS106@12'
2301384-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/23/23 08:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0558	01/23/23	01/24/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/23/23 08:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		113 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/23/23 08:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0559	"	01/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/23/23 08:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		139 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS106@12'
2301384-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/23/23 08:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0564	01/24/23	01/25/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/23/23 08:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		47.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		71.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/23/23 08:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0563	01/23/23	01/24/23	EPA 6020B	
Barium	4.03	0.400		"	"	"	"	"	"	
Selenium	0.205	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/23/23 08:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	91.6			%	1	BGA0576	01/24/23	01/24/23	Calculation	

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

Date Sampled: **01/23/23 08:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS106@12'
2301384-01 (Soil)

Summit Scientific

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

pH	7.24	pH Units	1	BGA0590	01/24/23	01/24/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS107@10'
2301384-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/23/23 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0558	01/23/23	01/24/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/23/23 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		116 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/23/23 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0559	"	01/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/23/23 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		140 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS107@10'
2301384-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/23/23 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0564	01/24/23	01/25/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/23/23 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		40.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/23/23 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.67	0.200		mg/kg dry	1	BGA0563	01/23/23	01/24/23	EPA 6020B	
Barium	66.4	0.400		"	"	"	"	"	"	
Selenium	0.613	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/23/23 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.1			%	1	BGA0576	01/24/23	01/24/23	Calculation	

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

Date Sampled: **01/23/23 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/26/23 08:38

SS107@10'
2301384-02 (Soil)

Summit Scientific

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

pH	7.67	pH Units	1	BGA0590	01/24/23	01/24/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS108@12'
2301384-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/23/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0558	01/23/23	01/24/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.91	0.50		"	"	"	"	"	"	

Date Sampled: **01/23/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		125 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/23/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0559	"	01/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/23/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		136 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS108@12'
2301384-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/23/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0564	01/24/23	01/25/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/23/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		43.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/23/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0563	01/23/23	01/24/23	EPA 6020B	
Barium	14.0	0.400		"	"	"	"	"	"	
Selenium	0.277	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/23/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.4			%	1	BGA0576	01/24/23	01/24/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/23/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/26/23 08:38

SS108@12'
2301384-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.52	pH Units	1	BGA0590	01/24/23	01/24/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS109@12'
2301384-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/23/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0558	01/23/23	01/24/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/23/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		110 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/23/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0559	"	01/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/23/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		102 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS109@12'
2301384-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/23/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0564	01/24/23	01/25/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/23/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		54.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/23/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0563	01/23/23	01/24/23	EPA 6020B	
Barium	6.99	0.400		"	"	"	"	"	"	
Selenium	0.249	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/23/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.1			%	1	BGA0576	01/24/23	01/24/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/23/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS109@12'
2301384-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.36	pH Units	1	BGA0590	01/24/23	01/24/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS110@12'
2301384-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/23/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0558	01/23/23	01/24/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/23/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		115 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/23/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0559	"	01/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/23/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		92.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS110@12'
2301384-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/23/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0564	01/24/23	01/25/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/23/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		56.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		73.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/23/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0563	01/23/23	01/24/23	EPA 6020B	
Barium	17.6	0.400		"	"	"	"	"	"	
Selenium	0.229	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/23/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.6			%	1	BGA0576	01/24/23	01/24/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/23/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS110@12'
2301384-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.09	pH Units	1	BGA0590	01/24/23	01/24/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS111@12'
2301384-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/23/23 15:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0558	01/23/23	01/24/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/23/23 15:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		113 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/23/23 15:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0559	"	01/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/23/23 15:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		97.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS111@12'
2301384-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/23/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGA0564	01/24/23	01/25/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/23/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		75.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/23/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGA0563	01/23/23	01/24/23	EPA 6020B	
Barium	7.28	0.400		"	"	"	"	"	"	
Selenium	0.306	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/23/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.9			%	1	BGA0576	01/24/23	01/24/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/23/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

SS111@12'
2301384-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.33	pH Units	1	BGA0590	01/24/23	01/24/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0558 - EPA 5030 Soil MS

Blank (BGA0558-BLK1)

Prepared: 01/23/23 Analyzed: 01/24/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		97.1	50-150			
Surrogate: Toluene-d8	0.0540		"	0.0400		135	50-150			
Surrogate: 4-Bromofluorobenzene	0.0500		"	0.0400		125	50-150			

LCS (BGA0558-BS1)

Prepared: 01/23/23 Analyzed: 01/24/23

Benzene	0.0956	0.0020	mg/kg	0.100		95.6	70-130			
Toluene	0.101	0.0050	"	0.100		101	70-130			
Ethylbenzene	0.118	0.0050	"	0.100		118	70-130			
m,p-Xylene	0.233	0.010	"	0.200		116	70-130			
o-Xylene	0.112	0.0050	"	0.100		112	70-130			
1,2,4-Trimethylbenzene	0.116	0.0050	"	0.100		116	70-130			
1,3,5-Trimethylbenzene	0.0942	0.0050	"	0.100		94.2	70-130			
Naphthalene	0.104	0.0038	"	0.100		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0355		"	0.0400		88.6	50-150			
Surrogate: Toluene-d8	0.0357		"	0.0400		89.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0543		"	0.0400		136	50-150			

Matrix Spike (BGA0558-MS1)

Source: 2301375-01

Prepared: 01/23/23 Analyzed: 01/24/23

Benzene	0.0967	0.0020	mg/kg	0.100	ND	96.7	70-130			
Toluene	0.0817	0.0050	"	0.100	ND	81.7	70-130			
Ethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
m,p-Xylene	0.185	0.010	"	0.200	ND	92.3	70-130			
o-Xylene	0.0915	0.0050	"	0.100	ND	91.5	70-130			
1,2,4-Trimethylbenzene	0.0986	0.0050	"	0.100	ND	98.6	70-130			
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130			
Naphthalene	0.0787	0.0038	"	0.100	ND	78.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0326		"	0.0400		81.5	50-150			
Surrogate: Toluene-d8	0.0441		"	0.0400		110	50-150			
Surrogate: 4-Bromofluorobenzene	0.0480		"	0.0400		120	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0558 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0558-MSD1)		Source: 2301375-01			Prepared: 01/23/23 Analyzed: 01/24/23					
Benzene	0.0994	0.0020	mg/kg	0.100	ND	99.4	70-130	2.75	30	
Toluene	0.0937	0.0050	"	0.100	ND	93.7	70-130	13.8	30	
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	2.34	30	
m,p-Xylene	0.200	0.010	"	0.200	ND	99.9	70-130	7.82	30	
o-Xylene	0.0962	0.0050	"	0.100	ND	96.2	70-130	5.02	30	
1,2,4-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130	8.95	30	
1,3,5-Trimethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130	8.00	30	
Naphthalene	0.0864	0.0038	"	0.100	ND	86.4	70-130	9.41	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0376		"	0.0400		94.0	50-150			
Surrogate: Toluene-d8	0.0486		"	0.0400		121	50-150			
Surrogate: 4-Bromofluorobenzene	0.0495		"	0.0400		124	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0559 - EPA 3550A

Blank (BGA0559-BLK1)

Prepared: 01/23/23 Analyzed: 01/24/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.5		"	12.5		108	30-150			

LCS (BGA0559-BS1)

Prepared: 01/23/23 Analyzed: 01/24/23

C10-C28 (DRO)	517	50	mg/kg	500		103	70-130			
Surrogate: o-Terphenyl	13.7		"	12.5		110	30-150			

Matrix Spike (BGA0559-MS1)

Source: 2301375-01

Prepared: 01/23/23 Analyzed: 01/24/23

C10-C28 (DRO)	524	50	mg/kg	500	54.4	93.9	70-130			
Surrogate: o-Terphenyl	13.1		"	12.5		105	30-150			

Matrix Spike Dup (BGA0559-MSD1)

Source: 2301375-01

Prepared: 01/23/23 Analyzed: 01/24/23

C10-C28 (DRO)	526	50	mg/kg	500	54.4	94.3	70-130	0.369	20	
Surrogate: o-Terphenyl	13.0		"	12.5		104	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0564 - EPA 5030 Soil MS

Blank (BGA0564-BLK1)

Prepared & Analyzed: 01/24/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0189		"	0.0333		56.6	40-150			
Surrogate: Fluoranthene-d10	0.0304		"	0.0333		91.1	40-150			

LCS (BGA0564-BS1)

Prepared & Analyzed: 01/24/23

Acenaphthene	0.0314	0.00500	mg/kg	0.0333		94.1	31-137			
Anthracene	0.0322	0.00500	"	0.0333		96.7	30-120			
Benzo (a) anthracene	0.0287	0.00500	"	0.0333		86.2	30-120			
Benzo (a) pyrene	0.0287	0.00500	"	0.0333		86.2	30-120			
Benzo (b) fluoranthene	0.0296	0.00500	"	0.0333		88.7	30-120			
Benzo (k) fluoranthene	0.0327	0.00500	"	0.0333		98.2	30-120			
Chrysene	0.0327	0.00500	"	0.0333		98.0	30-120			
Dibenz (a,h) anthracene	0.0230	0.00500	"	0.0333		69.1	30-120			
Fluoranthene	0.0315	0.00500	"	0.0333		94.4	30-120			
Fluorene	0.0315	0.00500	"	0.0333		94.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0240	0.00500	"	0.0333		72.0	30-120			
Pyrene	0.0324	0.00500	"	0.0333		97.1	35-142			
1-Methylnaphthalene	0.0266	0.00500	"	0.0333		79.9	35-142			
2-Methylnaphthalene	0.0206	0.00500	"	0.0333		61.7	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0284		"	0.0333		85.3	40-150			
Surrogate: Fluoranthene-d10	0.0317		"	0.0333		95.2	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0564 - EPA 5030 Soil MS

Matrix Spike (BGA0564-MS1)

Source: 2301375-01

Prepared & Analyzed: 01/24/23

Acenaphthene	0.0170	0.00500	mg/kg	0.0333	ND	50.9	31-137		
Anthracene	0.0158	0.00500	"	0.0333	ND	47.5	30-120		
Benzo (a) anthracene	0.0162	0.00500	"	0.0333	ND	48.6	30-120		
Benzo (a) pyrene	0.0156	0.00500	"	0.0333	ND	46.9	30-120		
Benzo (b) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.9	30-120		
Benzo (k) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.6	30-120		
Chrysene	0.0155	0.00500	"	0.0333	ND	46.4	30-120		
Dibenz (a,h) anthracene	0.0137	0.00500	"	0.0333	ND	41.1	30-120		
Fluoranthene	0.0168	0.00500	"	0.0333	ND	50.3	30-120		
Fluorene	0.0174	0.00500	"	0.0333	ND	52.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0134	0.00500	"	0.0333	ND	40.2	30-120		
Pyrene	0.0171	0.00500	"	0.0333	ND	51.4	35-142		
1-Methylnaphthalene	0.0142	0.00500	"	0.0333	ND	42.7	15-130		
2-Methylnaphthalene	0.0155	0.00500	"	0.0333	ND	46.4	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0161		"	0.0333		48.3	40-150		
Surrogate: Fluoranthene-d10	0.0174		"	0.0333		52.3	40-150		

Matrix Spike Dup (BGA0564-MSD1)

Source: 2301375-01

Prepared & Analyzed: 01/24/23

Acenaphthene	0.0198	0.00500	mg/kg	0.0333	ND	59.4	31-137	15.5	30
Anthracene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	20.2	30
Benzo (a) anthracene	0.0193	0.00500	"	0.0333	ND	57.8	30-120	17.3	30
Benzo (a) pyrene	0.0171	0.00500	"	0.0333	ND	51.4	30-120	9.27	30
Benzo (b) fluoranthene	0.0157	0.00500	"	0.0333	ND	47.2	30-120	7.42	30
Benzo (k) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.3	30-120	14.7	30
Chrysene	0.0184	0.00500	"	0.0333	ND	55.1	30-120	17.0	30
Dibenz (a,h) anthracene	0.0155	0.00500	"	0.0333	ND	46.6	30-120	12.6	30
Fluoranthene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	14.4	30
Fluorene	0.0202	0.00500	"	0.0333	ND	60.7	30-120	15.2	30
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	46.0	30-120	13.5	30
Pyrene	0.0193	0.00500	"	0.0333	ND	57.9	35-142	11.9	30
1-Methylnaphthalene	0.0190	0.00500	"	0.0333	ND	57.0	15-130	28.7	50
2-Methylnaphthalene	0.0172	0.00500	"	0.0333	ND	51.7	15-130	10.9	50
Surrogate: 2-Methylnaphthalene-d10	0.0222		"	0.0333		66.7	40-150		
Surrogate: Fluoranthene-d10	0.0204		"	0.0333		61.1	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0563 - EPA 3050B

Blank (BGA0563-BLK1)

Prepared: 01/23/23 Analyzed: 01/24/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGA0563-BS1)

Prepared: 01/23/23 Analyzed: 01/24/23

Arsenic	47.8	0.200	mg/kg wet	40.0	119	80-120
Barium	44.5	0.400	"	40.0	111	80-120
Selenium	4.70	0.260	"	4.00	117	80-120

Duplicate (BGA0563-DUP1)

Source: 2301348-01

Prepared: 01/23/23 Analyzed: 01/24/23

Arsenic	1.85	0.200	mg/kg dry	1.87	1.13	20	
Barium	82.2	0.400	"	48.5	51.6	20	QR-03
Selenium	1.09	0.260	"	0.402	92.0	20	QR-03

Matrix Spike (BGA0563-MS1)

Source: 2301348-01

Prepared: 01/23/23 Analyzed: 01/24/23

Arsenic	55.4	0.200	mg/kg dry	45.6	1.87	117	75-125	
Barium	127	0.400	"	45.6	48.5	172	75-125	QM-05
Selenium	5.23	0.260	"	4.56	0.402	106	75-125	

Matrix Spike Dup (BGA0563-MSD1)

Source: 2301348-01

Prepared: 01/23/23 Analyzed: 01/24/23

Arsenic	59.9	0.200	mg/kg dry	45.6	1.87	127	75-125	7.82	25	QM-05
Barium	118	0.400	"	45.6	48.5	152	75-125	7.42	25	QM-05
Selenium	5.87	0.260	"	4.56	0.402	120	75-125	11.6	25	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0576 - General Preparation

Duplicate (BGA0576-DUP1)

Source: 2301382-01

Prepared & Analyzed: 01/24/23

% Solids	81.4	%		81.7		0.420	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0590 - General Preparation

LCS (BGA0590-BS1)

Prepared & Analyzed: 01/24/23

pH	9.12	pH Units	9.18	99.3	95-105
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Duplicate (BGA0590-DUP1)

Source: 2301384-01

Prepared & Analyzed: 01/24/23

pH	7.23	pH Units	7.24	0.138	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/26/23 08:38

Notes and Definitions

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

January 31, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2301455

Enclosed are the results of analyses for samples received by Summit Scientific on 01/25/23 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS112@12'	2301455-01	Soil	01/25/23 08:06	01/25/23 18:00
SS113@10'	2301455-02	Soil	01/25/23 08:47	01/25/23 18:00
SS114@12'	2301455-03	Soil	01/25/23 10:01	01/25/23 18:00
SS115@12'	2301455-04	Soil	01/25/23 12:01	01/25/23 18:00
SS116@12'	2301455-05	Soil	01/25/23 13:35	01/25/23 18:00
SS117@12'	2301455-06	Soil	01/25/23 14:28	01/25/23 18:00

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

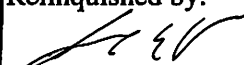
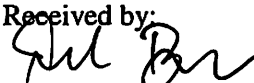
4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

2301455

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Warning 3, 4-2 Tank Battery
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *			
1	SS112 e 12'	1/25/23	806	3			X			X				X	X	X		X	X	X		pH, EC, SAR by saturated paste
2	SS113 e 10'		847																			
3	SS114 e 12'		1001																			
4	SS115 e 12'		1201																			
5	SS116 e 12'		1335																			
6	SS117 e 12'	↓	1428	↓										↓	↓	↓		↓	↓	↓		
7																						
8																						
9																						
10	...																					

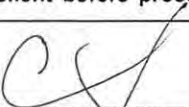
Relinquished by: 	Date/Time: 1/25/23 1616	Received by: Tasman's Lock Box	Date/Time: 1/25/23 1616	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes: * = pH only * = PAHs = Chrysene, Fluorene, Fluoranthene, 1-M, 2-M. * = Metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman's Lock Box	Date/Time: 1/25/23 1800	Received by: 	Date/Time: 1/25/23 1800	Sample Integrity: 0.2	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 0.2 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

Sample Receipt Checklist

S2 Work Order# 2301455Client: PDC / Taosman Client Project ID: Werning 3, 4-2 Tank BottomShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____
☐ ☒ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 0.2 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>On ice.</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day.</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any): 				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				


 Custodian Printed Name

1-25-23
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS112@12'
2301455-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/23 08:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0628	01/25/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/25/23 08:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		124 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/23 08:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0629	01/25/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/25/23 08:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		109 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS112@12'
2301455-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/25/23 08:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0634	01/26/23	01/27/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/25/23 08:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		63.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/25/23 08:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0633	01/25/23	01/26/23	EPA 6020B	
Barium	7.89	0.400		"	"	"	"	"	"	
Selenium	0.225	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 08:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.0			%	1	BGA0646	01/26/23	01/26/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/25/23 08:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS112@12'
2301455-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.26	pH Units	1	BGA0647	01/26/23	01/26/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS113@10'
2301455-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/23 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0628	01/25/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/25/23 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		129 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/23 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0629	01/25/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/25/23 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		130 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS113@10'
2301455-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/25/23 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0634	01/26/23	01/27/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/25/23 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		47.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/25/23 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.439	0.200		mg/kg dry	1	BGA0633	01/25/23	01/26/23	EPA 6020B	
Barium	23.0	0.400		"	"	"	"	"	"	
Selenium	0.327	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.2			%	1	BGA0646	01/26/23	01/26/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/25/23 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS113@10'
2301455-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.14	pH Units	1	BGA0647	01/26/23	01/26/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS114@12'
2301455-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0628	01/25/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/25/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		130 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0629	01/25/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/25/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		112 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS114@12'
2301455-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/25/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0634	01/26/23	01/27/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/25/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		61.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		75.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/25/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.239	0.200		mg/kg dry	1	BGA0633	01/25/23	01/26/23	EPA 6020B	
Barium	10.9	0.400		"	"	"	"	"	"	
Selenium	0.257	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.8			%	1	BGA0646	01/26/23	01/26/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/25/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/31/23 11:15

SS114@12'
2301455-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.38	pH Units	1	BGA0647	01/26/23	01/26/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS115@12'
2301455-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0628	01/25/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/25/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		126 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0629	01/25/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/25/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		114 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS115@12'
2301455-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/25/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0634	01/26/23	01/27/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/25/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		73.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		72.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/25/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0633	01/25/23	01/26/23	EPA 6020B	
Barium	16.1	0.400		"	"	"	"	"	"	
Selenium	0.191	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.5			%	1	BGA0646	01/26/23	01/26/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/25/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/31/23 11:15

SS115@12'
2301455-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.36	pH Units	1	BGA0647	01/26/23	01/26/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS116@12'
2301455-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0628	01/25/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		126 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0629	01/25/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		118 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS116@12'
2301455-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/25/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0634	01/26/23	01/27/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/25/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		72.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/25/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0633	01/25/23	01/26/23	EPA 6020B	
Barium	7.36	0.400		"	"	"	"	"	"	
Selenium	0.374	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.7			%	1	BGA0646	01/26/23	01/26/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/25/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS116@12'
2301455-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.33	pH Units	1	BGA0647	01/26/23	01/26/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS117@12'
2301455-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/23 14:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0628	01/25/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/25/23 14:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		126 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/23 14:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0629	01/25/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/25/23 14:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		114 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

SS117@12'
2301455-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/25/23 14:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0634	01/26/23	01/27/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/25/23 14:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		72.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/25/23 14:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.217	0.200		mg/kg dry	1	BGA0633	01/25/23	01/27/23	EPA 6020B	
Barium	12.3	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/25/23 14:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.5			%	1	BGA0646	01/26/23	01/26/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/25/23 14:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/31/23 11:15

SS117@12'
2301455-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.62	pH Units	1	BGA0647	01/26/23	01/26/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0628 - EPA 5030 Soil MS

Blank (BGA0628-BLK1)

Prepared: 01/25/23 Analyzed: 01/26/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0518		"	0.0400		130	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0426		"	0.0400		106	50-150			

LCS (BGA0628-BS1)

Prepared: 01/25/23 Analyzed: 01/26/23

Benzene	0.118	0.0020	mg/kg	0.125		94.5	70-130			
Toluene	0.120	0.0050	"	0.125		95.6	70-130			
Ethylbenzene	0.142	0.0050	"	0.125		113	70-130			
m,p-Xylene	0.265	0.010	"	0.250		106	70-130			
o-Xylene	0.127	0.0050	"	0.125		102	70-130			
1,2,4-Trimethylbenzene	0.145	0.0050	"	0.125		116	70-130			
1,3,5-Trimethylbenzene	0.144	0.0050	"	0.125		115	70-130			
Naphthalene	0.122	0.0038	"	0.125		97.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0530		"	0.0400		133	50-150			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	50-150			

Matrix Spike (BGA0628-MS1)

Source: 2301395-03

Prepared: 01/25/23 Analyzed: 01/26/23

Benzene	0.110	0.0020	mg/kg	0.125	ND	87.6	70-130			
Toluene	0.113	0.0050	"	0.125	ND	90.0	70-130			
Ethylbenzene	0.136	0.0050	"	0.125	ND	108	70-130			
m,p-Xylene	0.257	0.010	"	0.250	0.0126	97.8	70-130			
o-Xylene	0.127	0.0050	"	0.125	ND	102	70-130			
1,2,4-Trimethylbenzene	0.155	0.0050	"	0.125	0.00963	116	70-130			
1,3,5-Trimethylbenzene	0.142	0.0050	"	0.125	0.00636	108	70-130			
Naphthalene	0.195	0.0038	"	0.125	0.0721	98.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0519		"	0.0400		130	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0628 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0628-MSD1)	Source: 2301395-03			Prepared: 01/25/23 Analyzed: 01/26/23						
Benzene	0.115	0.0020	mg/kg	0.125	ND	92.2	70-130	5.13	30	
Toluene	0.119	0.0050	"	0.125	ND	95.1	70-130	5.44	30	
Ethylbenzene	0.140	0.0050	"	0.125	ND	112	70-130	3.10	30	
m,p-Xylene	0.270	0.010	"	0.250	0.0126	103	70-130	4.98	30	
o-Xylene	0.129	0.0050	"	0.125	ND	103	70-130	1.48	30	
1,2,4-Trimethylbenzene	0.162	0.0050	"	0.125	0.00963	122	70-130	4.40	30	
1,3,5-Trimethylbenzene	0.145	0.0050	"	0.125	0.00636	111	70-130	2.40	30	
Naphthalene	0.198	0.0038	"	0.125	0.0721	101	70-130	1.60	30	
Surrogate: 1,2-Dichloroethane-d4	0.0526		"	0.0400		131	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		103	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0629 - EPA 3550A

Blank (BGA0629-BLK1)

Prepared: 01/25/23 Analyzed: 01/26/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.6		"	12.5		101	30-150			

LCS (BGA0629-BS1)

Prepared: 01/25/23 Analyzed: 01/26/23

C10-C28 (DRO)	461	50	mg/kg	500		92.2	70-130			
Surrogate: o-Terphenyl	12.9		"	12.5		103	30-150			

Matrix Spike (BGA0629-MS1)

Source: 2301395-03

Prepared: 01/25/23 Analyzed: 01/26/23

C10-C28 (DRO)	437	50	mg/kg	500	ND	87.4	70-130			
Surrogate: o-Terphenyl	12.5		"	12.5		99.9	30-150			

Matrix Spike Dup (BGA0629-MSD1)

Source: 2301395-03

Prepared: 01/25/23 Analyzed: 01/26/23

C10-C28 (DRO)	421	50	mg/kg	500	ND	84.2	70-130	3.76	20	
Surrogate: o-Terphenyl	12.6		"	12.5		101	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result		%REC	Limits	RPD	Notes

Batch BGA0634 - EPA 5030 Soil MS

Blank (BGA0634-BLK1)

Prepared & Analyzed: 01/26/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0282		"	0.0333		84.6		40-150			
Surrogate: Fluoranthene-d10	0.0283		"	0.0333		85.0		40-150			

LCS (BGA0634-BS1)

Prepared & Analyzed: 01/26/23

Acenaphthene	0.0293	0.00500	mg/kg	0.0333		87.9		31-137			
Anthracene	0.0292	0.00500	"	0.0333		87.7		30-120			
Benzo (a) anthracene	0.0282	0.00500	"	0.0333		84.7		30-120			
Benzo (a) pyrene	0.0276	0.00500	"	0.0333		82.8		30-120			
Benzo (b) fluoranthene	0.0271	0.00500	"	0.0333		81.3		30-120			
Benzo (k) fluoranthene	0.0282	0.00500	"	0.0333		84.6		30-120			
Chrysene	0.0298	0.00500	"	0.0333		89.3		30-120			
Dibenz (a,h) anthracene	0.0250	0.00500	"	0.0333		75.0		30-120			
Fluoranthene	0.0284	0.00500	"	0.0333		85.2		30-120			
Fluorene	0.0292	0.00500	"	0.0333		87.6		30-120			
Indeno (1,2,3-cd) pyrene	0.0247	0.00500	"	0.0333		74.1		30-120			
Pyrene	0.0303	0.00500	"	0.0333		90.8		35-142			
1-Methylnaphthalene	0.0310	0.00500	"	0.0333		92.9		35-142			
2-Methylnaphthalene	0.0284	0.00500	"	0.0333		85.3		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0280		"	0.0333		83.9		40-150			
Surrogate: Fluoranthene-d10	0.0282		"	0.0333		84.7		40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0634 - EPA 5030 Soil MS

Matrix Spike (BGA0634-MS1)

Source: 2301446-01

Prepared & Analyzed: 01/26/23

Acenaphthene	0.0223	0.00500	mg/kg	0.0333	ND	66.9	31-137				
Anthracene	0.0220	0.00500	"	0.0333	ND	66.1	30-120				
Benzo (a) anthracene	0.0225	0.00500	"	0.0333	ND	67.5	30-120				
Benzo (a) pyrene	0.0209	0.00500	"	0.0333	ND	62.7	30-120				
Benzo (b) fluoranthene	0.0209	0.00500	"	0.0333	ND	62.8	30-120				
Benzo (k) fluoranthene	0.0210	0.00500	"	0.0333	ND	63.1	30-120				
Chrysene	0.0219	0.00500	"	0.0333	ND	65.6	30-120				
Dibenz (a,h) anthracene	0.0180	0.00500	"	0.0333	ND	53.9	30-120				
Fluoranthene	0.0221	0.00500	"	0.0333	ND	66.2	30-120				
Fluorene	0.0230	0.00500	"	0.0333	ND	68.9	30-120				
Indeno (1,2,3-cd) pyrene	0.0177	0.00500	"	0.0333	ND	53.1	30-120				
Pyrene	0.0236	0.00500	"	0.0333	ND	70.8	35-142				
1-Methylnaphthalene	0.0248	0.00500	"	0.0333	ND	74.3	15-130				
2-Methylnaphthalene	0.0236	0.00500	"	0.0333	ND	70.6	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0227		"	0.0333		68.0	40-150				
Surrogate: Fluoranthene-d10	0.0232		"	0.0333		69.7	40-150				

Matrix Spike Dup (BGA0634-MSD1)

Source: 2301446-01

Prepared & Analyzed: 01/26/23

Acenaphthene	0.0222	0.00500	mg/kg	0.0333	ND	66.7	31-137	0.340	30		
Anthracene	0.0189	0.00500	"	0.0333	ND	56.6	30-120	15.4	30		
Benzo (a) anthracene	0.0208	0.00500	"	0.0333	ND	62.3	30-120	7.95	30		
Benzo (a) pyrene	0.0194	0.00500	"	0.0333	ND	58.3	30-120	7.33	30		
Benzo (b) fluoranthene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	9.85	30		
Benzo (k) fluoranthene	0.0191	0.00500	"	0.0333	ND	57.4	30-120	9.52	30		
Chrysene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	7.40	30		
Dibenz (a,h) anthracene	0.0181	0.00500	"	0.0333	ND	54.4	30-120	1.01	30		
Fluoranthene	0.0201	0.00500	"	0.0333	ND	60.2	30-120	9.43	30		
Fluorene	0.0235	0.00500	"	0.0333	ND	70.5	30-120	2.28	30		
Indeno (1,2,3-cd) pyrene	0.0177	0.00500	"	0.0333	ND	53.1	30-120	0.0283	30		
Pyrene	0.0212	0.00500	"	0.0333	ND	63.5	35-142	10.9	30		
1-Methylnaphthalene	0.0276	0.00500	"	0.0333	ND	82.7	15-130	10.6	50		
2-Methylnaphthalene	0.0225	0.00500	"	0.0333	ND	67.5	15-130	4.58	50		
Surrogate: 2-Methylnaphthalene-d10	0.0222		"	0.0333		66.7	40-150				
Surrogate: Fluoranthene-d10	0.0205		"	0.0333		61.4	40-150				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0633 - EPA 3050B

Blank (BGA0633-BLK1)

Prepared: 01/25/23 Analyzed: 01/26/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGA0633-BS1)

Prepared: 01/25/23 Analyzed: 01/26/23

Arsenic	40.3	0.200	mg/kg wet	40.0	101	80-120
Barium	46.3	0.400	"	40.0	116	80-120
Selenium	4.68	0.260	"	4.00	117	80-120

Duplicate (BGA0633-DUP1)

Source: 2301455-01

Prepared: 01/25/23 Analyzed: 01/27/23

Arsenic	0.269	0.200	mg/kg dry	ND		200	20	QR-03
Barium	7.35	0.400	"	7.89		7.02	20	
Selenium	ND	0.260	"	0.225		200	20	QR-01

Matrix Spike (BGA0633-MS1)

Source: 2301455-01

Prepared: 01/25/23 Analyzed: 01/26/23

Arsenic	49.1	0.200	mg/kg dry	48.2	ND	102	75-125
Barium	51.5	0.400	"	48.2	7.89	90.5	75-125
Selenium	5.04	0.260	"	4.82	0.225	100	75-125

Matrix Spike Dup (BGA0633-MSD1)

Source: 2301455-01

Prepared: 01/25/23 Analyzed: 01/26/23

Arsenic	53.6	0.200	mg/kg dry	48.2	ND	111	75-125	8.61	25
Barium	57.3	0.400	"	48.2	7.89	103	75-125	10.7	25
Selenium	5.38	0.260	"	4.82	0.225	107	75-125	6.54	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0646 - General Preparation

Duplicate (BGA0646-DUP1)		Source: 2301455-01			Prepared & Analyzed: 01/26/23					
% Solids	84.5		%		83.0			1.68	20	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:15

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0647 - General Preparation

LCS (BGA0647-BS1)

Prepared & Analyzed: 01/26/23

pH	9.05	pH Units	9.18	98.6	95-105
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Duplicate (BGA0647-DUP1)

Source: 2301455-01

Prepared & Analyzed: 01/26/23

pH	7.15	pH Units	7.26	1.53	20
----	------	----------	------	------	----

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

01/31/23 11:15

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

January 31, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2301473

Enclosed are the results of analyses for samples received by Summit Scientific on 01/26/23 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS118@12'	2301473-01	Soil	01/26/23 07:55	01/26/23 17:55
SS119@12'	2301473-02	Soil	01/26/23 08:14	01/26/23 17:55
SS120@12'	2301473-03	Soil	01/26/23 09:37	01/26/23 17:55
SS121@12'	2301473-04	Soil	01/26/23 10:37	01/26/23 17:55
SS122@12'	2301473-05	Soil	01/26/23 12:59	01/26/23 17:55
SS123@12'	2301473-06	Soil	01/26/23 13:01	01/26/23 17:55
SS124@12'	2301473-07	Soil	01/26/23 13:50	01/26/23 17:55
SS125@10'	2301473-08	Soil	01/26/23 14:00	01/26/23 17:55
SS126@12'	2301473-09	Soil	01/26/23 15:15	01/26/23 17:55

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

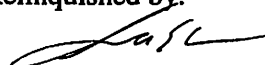

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Warning 3,4-2 Tank Battery
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAHs	Metals		
1	SS118 e 12'	1/26/23	755	3			X			X				X	X	X		X	X	X	pH, EC, SAR by saturated paste
2	SS119 e 12'		814																		
3	SS120 e 12'		937																		
4	SS121 e 12'		1037																		
5	SS122 e 12'		1259																		
6	SS123 e 12'		1301																		
7	SS124 e 12'		1350																		
8	SS125 e 10'		1400																		
9	SS126 e 12'		1515																		
10	...																				

Relinquished by: 	Date/Time: 1/26/23 1625	Received by: Tasman's Lock Box	Date/Time: 1/26/23 1625	Turn Around Time (Check)	Same Day <input checked="" type="checkbox"/> 72 hours 24 hours 48 hours Sample Integrity: Temperature Upon Receipt: 7.0 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes: * = pH only * = PAH's = chrysene, pyrene, Fluorene, 1-M, 2-M. * = Metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman's Lock Box	Date/Time: 12623 1735	Received by: 	Date/Time: 12623 1735			
Relinquished by:	Date/Time:	Received by:	Date/Time:			

S₂

Sample Receipt Checklist

S2 Work Order# 2301473Client: ProffittsmanClient Project ID: Warning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐Airbill #:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

7.0

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sameday
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Date/Time

1.26.23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS118@12'
2301473-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	0.0091	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.071	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.082	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.062	0.0050		"	"	"	"	"	"	
Naphthalene	0.0047	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	7.7	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		84.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		120 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		107 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS118@12'
2301473-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		49.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		75.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0673	01/27/23	01/28/23	EPA 6020B	
Barium	7.60	0.400		"	"	"	"	"	"	
Selenium	0.317	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.3			%	1	BGA0676	01/27/23	01/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/23 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS118@12'
2301473-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.92	pH Units	1	BGA0682	01/27/23	01/27/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS119@12'
2301473-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		120 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		118 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		119 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		92.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS119@12'
2301473-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		49.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		73.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0673	01/27/23	01/28/23	EPA 6020B	
Barium	9.29	0.400		"	"	"	"	"	"	
Selenium	0.423	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.2			%	1	BGA0676	01/27/23	01/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/23 08:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/31/23 11:42

SS119@12'
2301473-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.31	pH Units	1	BGA0682	01/27/23	01/27/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS120@12'
2301473-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 09:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 09:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		122 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		117 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		127 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 09:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 09:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		119 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS120@12'
2301473-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 09:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 09:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.8 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 09:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGA0673	01/27/23	01/28/23	EPA 6020B	
Barium	25.1	0.400		"	"	"	"	"	"	
Selenium	0.518	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 09:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.7			%	1	BGA0676	01/27/23	01/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/23 09:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS120@12'
2301473-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.40	pH Units	1	BGA0682	01/27/23	01/27/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS121@12'
2301473-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 10:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.020	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.013	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.012	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.88	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		82.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 10:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		108 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS121@12'
2301473-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 10:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 10:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		45.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 10:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.200	0.200		mg/kg dry	1	BGA0673	01/27/23	01/28/23	EPA 6020B	
Barium	11.1	0.400		"	"	"	"	"	"	
Selenium	0.399	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 10:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.5			%	1	BGA0676	01/27/23	01/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/23 10:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS121@12'
2301473-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.63	pH Units	1	BGA0682	01/27/23	01/27/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS122@12'
2301473-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		132 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS122@12'
2301473-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		54.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		72.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0673	01/27/23	01/28/23	EPA 6020B	
Barium	5.64	0.400		"	"	"	"	"	"	
Selenium	0.210	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.2			%	1	BGA0676	01/27/23	01/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/23 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS122@12'
2301473-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.36	pH Units	1	BGA0682	01/27/23	01/27/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS123@12'
2301473-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		115 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		119 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		120 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS123@12'
2301473-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		60.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		89.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0673	01/27/23	01/28/23	EPA 6020B	
Barium	13.3	0.400		"	"	"	"	"	"	
Selenium	0.412	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	91.2			%	1	BGA0676	01/27/23	01/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS123@12'
2301473-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.55	pH Units	1	BGA0682	01/27/23	01/27/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS124@12'
2301473-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		84.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		122 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS124@12'
2301473-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		54.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0673	01/27/23	01/28/23	EPA 6020B	
Barium	6.17	0.400		"	"	"	"	"	"	
Selenium	0.250	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.3			%	1	BGA0676	01/27/23	01/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS124@12'
2301473-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.47	pH Units	1	BGA0682	01/27/23	01/27/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS125@10'
2301473-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/27/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		83.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		117 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS125@10'
2301473-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		54.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		78.8 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.663	0.200		mg/kg dry	1	BGA0673	01/27/23	01/28/23	EPA 6020B	
Barium	45.8	0.400		"	"	"	"	"	"	
Selenium	0.533	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.0			%	1	BGA0676	01/27/23	01/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS125@10'
2301473-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.89	pH Units	1	BGA0682	01/27/23	01/27/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS126@12'
2301473-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/23 15:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0664	01/26/23	01/26/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/23 15:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		81.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/23 15:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0665	01/26/23	01/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/23 15:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		111 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

SS126@12'
2301473-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/23 15:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGA0669	01/27/23	01/28/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/26/23 15:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		71.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/26/23 15:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.26	0.200		mg/kg dry	1	BGA0673	01/27/23	01/28/23	EPA 6020B	
Barium	10.7	0.400		"	"	"	"	"	"	
Selenium	0.437	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/23 15:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.6			%	1	BGA0676	01/27/23	01/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/23 15:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	01/31/23 11:42

SS126@12'
2301473-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.51	pH Units	1	BGA0682	01/27/23	01/27/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0664 - EPA 5030 Soil MS

Blank (BGA0664-BLK1)

Prepared: 01/26/23 Analyzed: 01/27/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0523		"	0.0400		131	50-150			
Surrogate: Toluene-d8	0.0574		"	0.0400		143	50-150			
Surrogate: 4-Bromofluorobenzene	0.0583		"	0.0400		146	50-150			

LCS (BGA0664-BS1)

Prepared: 01/26/23 Analyzed: 01/27/23

Benzene	0.0808	0.0020	mg/kg	0.100		80.8	70-130			
Toluene	0.101	0.0050	"	0.100		101	70-130			
Ethylbenzene	0.103	0.0050	"	0.100		103	70-130			
m,p-Xylene	0.236	0.010	"	0.200		118	70-130			
o-Xylene	0.115	0.0050	"	0.100		115	70-130			
1,2,4-Trimethylbenzene	0.124	0.0050	"	0.100		124	70-130			
1,3,5-Trimethylbenzene	0.130	0.0050	"	0.100		130	70-130			
Naphthalene	0.0757	0.0038	"	0.100		75.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0442		"	0.0400		111	50-150			
Surrogate: Toluene-d8	0.0562		"	0.0400		141	50-150			
Surrogate: 4-Bromofluorobenzene	0.0487		"	0.0400		122	50-150			

Matrix Spike (BGA0664-MS1)

Source: 2301468-01

Prepared: 01/26/23 Analyzed: 01/27/23

Benzene	0.0817	0.0020	mg/kg	0.100	ND	81.7	70-130			
Toluene	0.118	0.0050	"	0.100	ND	118	70-130			
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130			
m,p-Xylene	0.224	0.010	"	0.200	ND	112	70-130			
o-Xylene	0.107	0.0050	"	0.100	ND	107	70-130			
1,2,4-Trimethylbenzene	0.114	0.0050	"	0.100	ND	114	70-130			
1,3,5-Trimethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130			
Naphthalene	0.0723	0.0038	"	0.100	ND	72.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0481		"	0.0400		120	50-150			
Surrogate: Toluene-d8	0.0518		"	0.0400		129	50-150			
Surrogate: 4-Bromofluorobenzene	0.0450		"	0.0400		112	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0664 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0664-MSD1)		Source: 2301468-01			Prepared: 01/26/23 Analyzed: 01/27/23					
Benzene	0.0853	0.0020	mg/kg	0.100	ND	85.3	70-130	4.28	30	
Toluene	0.119	0.0050	"	0.100	ND	119	70-130	0.607	30	
Ethylbenzene	0.0996	0.0050	"	0.100	ND	99.6	70-130	1.17	30	
m,p-Xylene	0.215	0.010	"	0.200	ND	107	70-130	4.05	30	
o-Xylene	0.104	0.0050	"	0.100	ND	104	70-130	3.47	30	
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	4.66	30	
1,3,5-Trimethylbenzene	0.113	0.0050	"	0.100	ND	113	70-130	4.33	30	
Naphthalene	0.0740	0.0038	"	0.100	ND	74.0	70-130	2.30	30	
Surrogate: 1,2-Dichloroethane-d4		0.0470	"	0.0400		118	50-150			
Surrogate: Toluene-d8		0.0514	"	0.0400		129	50-150			
Surrogate: 4-Bromofluorobenzene		0.0449	"	0.0400		112	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0665 - EPA 3550A

Blank (BGA0665-BLK1)

Prepared: 01/26/23 Analyzed: 01/27/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	9.62		"	12.5		77.0	30-150			

LCS (BGA0665-BS1)

Prepared: 01/26/23 Analyzed: 01/27/23

C10-C28 (DRO)	407	50	mg/kg	500		81.4	70-130			
Surrogate: o-Terphenyl	10.1		"	12.5		80.4	30-150			

Matrix Spike (BGA0665-MS1)

Source: 2301468-01

Prepared: 01/26/23 Analyzed: 01/27/23

C10-C28 (DRO)	465	50	mg/kg	500	13.9	90.1	70-130			
Surrogate: o-Terphenyl	8.73		"	12.5		69.8	30-150			

Matrix Spike Dup (BGA0665-MSD1)

Source: 2301468-01

Prepared: 01/26/23 Analyzed: 01/27/23

C10-C28 (DRO)	403	50	mg/kg	500	13.9	77.8	70-130	14.2	20	
Surrogate: o-Terphenyl	7.19		"	12.5		57.6	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGA0669 - EPA 5030 Soil MS

Blank (BGA0669-BLK1)

Prepared: 01/27/23 Analyzed: 01/28/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0239		"	0.0333		71.7	40-150			
Surrogate: Fluoranthene-d10	0.0400		"	0.0333		120	40-150			

LCS (BGA0669-BS1)

Prepared: 01/27/23 Analyzed: 01/28/23

Acenaphthene	0.0311	0.00500	mg/kg	0.0333		93.3	31-137			
Anthracene	0.0306	0.00500	"	0.0333		91.8	30-120			
Benzo (a) anthracene	0.0287	0.00500	"	0.0333		86.0	30-120			
Benzo (a) pyrene	0.0313	0.00500	"	0.0333		93.9	30-120			
Benzo (b) fluoranthene	0.0278	0.00500	"	0.0333		83.4	30-120			
Benzo (k) fluoranthene	0.0301	0.00500	"	0.0333		90.3	30-120			
Chrysene	0.0327	0.00500	"	0.0333		98.2	30-120			
Dibenz (a,h) anthracene	0.0256	0.00500	"	0.0333		76.7	30-120			
Fluoranthene	0.0305	0.00500	"	0.0333		91.5	30-120			
Fluorene	0.0310	0.00500	"	0.0333		93.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0262	0.00500	"	0.0333		78.6	30-120			
Pyrene	0.0340	0.00500	"	0.0333		102	35-142			
1-Methylnaphthalene	0.0289	0.00500	"	0.0333		86.6	35-142			
2-Methylnaphthalene	0.0235	0.00500	"	0.0333		70.4	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0300		"	0.0333		90.0	40-150			
Surrogate: Fluoranthene-d10	0.0315		"	0.0333		94.5	40-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0669 - EPA 5030 Soil MS

Matrix Spike (BGA0669-MS1)

Source: 2301473-01

Prepared: 01/27/23 Analyzed: 01/28/23

Acenaphthene	0.0227	0.00500	mg/kg	0.0333	ND	68.0	31-137		
Anthracene	0.0248	0.00500	"	0.0333	ND	74.3	30-120		
Benzo (a) anthracene	0.0262	0.00500	"	0.0333	ND	78.5	30-120		
Benzo (a) pyrene	0.0238	0.00500	"	0.0333	ND	71.3	30-120		
Benzo (b) fluoranthene	0.0216	0.00500	"	0.0333	ND	64.8	30-120		
Benzo (k) fluoranthene	0.0220	0.00500	"	0.0333	ND	66.0	30-120		
Chrysene	0.0238	0.00500	"	0.0333	ND	71.4	30-120		
Dibenz (a,h) anthracene	0.0181	0.00500	"	0.0333	ND	54.3	30-120		
Fluoranthene	0.0249	0.00500	"	0.0333	ND	74.8	30-120		
Fluorene	0.0236	0.00500	"	0.0333	ND	70.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0188	0.00500	"	0.0333	ND	56.4	30-120		
Pyrene	0.0261	0.00500	"	0.0333	ND	78.4	35-142		
1-Methylnaphthalene	0.0228	0.00500	"	0.0333	ND	68.4	15-130		
2-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0244		"	0.0333		73.2	40-150		
Surrogate: Fluoranthene-d10	0.0266		"	0.0333		79.7	40-150		

Matrix Spike Dup (BGA0669-MSD1)

Source: 2301473-01

Prepared: 01/27/23 Analyzed: 01/28/23

Acenaphthene	0.0200	0.00500	mg/kg	0.0333	ND	60.1	31-137	12.3	30
Anthracene	0.0209	0.00500	"	0.0333	ND	62.8	30-120	16.7	30
Benzo (a) anthracene	0.0227	0.00500	"	0.0333	ND	68.0	30-120	14.3	30
Benzo (a) pyrene	0.0225	0.00500	"	0.0333	ND	67.6	30-120	5.34	30
Benzo (b) fluoranthene	0.0176	0.00500	"	0.0333	ND	52.8	30-120	20.4	30
Benzo (k) fluoranthene	0.0180	0.00500	"	0.0333	ND	54.1	30-120	19.9	30
Chrysene	0.0210	0.00500	"	0.0333	ND	63.0	30-120	12.5	30
Dibenz (a,h) anthracene	0.0180	0.00500	"	0.0333	ND	53.9	30-120	0.588	30
Fluoranthene	0.0218	0.00500	"	0.0333	ND	65.4	30-120	13.5	30
Fluorene	0.0208	0.00500	"	0.0333	ND	62.5	30-120	12.5	30
Indeno (1,2,3-cd) pyrene	0.0188	0.00500	"	0.0333	ND	56.3	30-120	0.245	30
Pyrene	0.0222	0.00500	"	0.0333	ND	66.5	35-142	16.4	30
1-Methylnaphthalene	0.0197	0.00500	"	0.0333	ND	59.0	15-130	14.8	50
2-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.5	15-130	1.42	50
Surrogate: 2-Methylnaphthalene-d10	0.0213		"	0.0333		64.0	40-150		
Surrogate: Fluoranthene-d10	0.0226		"	0.0333		67.9	40-150		

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0673 - EPA 3050B

Blank (BGA0673-BLK1)

Prepared & Analyzed: 01/27/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGA0673-BS1)

Prepared & Analyzed: 01/27/23

Arsenic	46.1	0.200	mg/kg wet	40.0	115	80-120
Barium	45.3	0.400	"	40.0	113	80-120
Selenium	4.55	0.260	"	4.00	114	80-120

Duplicate (BGA0673-DUP1)

Source: 2301278-17

Prepared & Analyzed: 01/27/23

Arsenic	0.566	0.200	mg/kg dry	0.619	8.93	20
Barium	ND	0.400	"	ND		20
Selenium	0.222	0.260	"	0.289	25.9	20

QR-01

Matrix Spike (BGA0673-MS1)

Source: 2301278-17

Prepared & Analyzed: 01/27/23

Arsenic	48.1	0.200	mg/kg dry	43.0	0.619	111	75-125
Barium	61.1	0.400	"	43.0	ND	142	75-125
Selenium	4.39	0.260	"	4.30	0.289	95.4	75-125

QM-05

Matrix Spike Dup (BGA0673-MSD1)

Source: 2301278-17

Prepared & Analyzed: 01/27/23

Arsenic	51.9	0.200	mg/kg dry	43.0	0.619	119	75-125	7.54	25
Barium	66.4	0.400	"	43.0	ND	154	75-125	8.31	25
Selenium	4.62	0.260	"	4.30	0.289	101	75-125	5.11	25

QM-05

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Reporting				Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0676 - General Preparation

Duplicate (BGA0676-DUP1)		Source: 2301278-17			Prepared & Analyzed: 01/27/23						
% Solids	92.3		%		93.0		0.752		20		

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0682 - General Preparation

LCS (BGA0682-BS1)

Prepared & Analyzed: 01/27/23

pH	9.05	pH Units	9.18	98.6	95-105
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Duplicate (BGA0682-DUP1)

Source: 2301473-01

Prepared & Analyzed: 01/27/23

pH	7.70	pH Units	7.92	2.82	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/31/23 11:42

Notes and Definitions

QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 01, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2301499

Enclosed are the results of analyses for samples received by Summit Scientific on 01/27/23 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS127@12'	2301499-01	Soil	01/27/23 08:15	01/27/23 17:55
SS128@12'	2301499-02	Soil	01/27/23 10:16	01/27/23 17:55
SS129@12'	2301499-03	Soil	01/27/23 11:47	01/27/23 17:55
SS130@12.5'	2301499-04	Soil	01/27/23 12:13	01/27/23 17:55
SS131@8'	2301499-05	Soil	01/27/23 12:34	01/27/23 17:55
SS132@10'	2301499-06	Soil	01/27/23 12:38	01/27/23 17:55
SS133@12'	2301499-07	Soil	01/27/23 12:50	01/27/23 17:55
SS134@12'	2301499-08	Soil	01/27/23 14:08	01/27/23 17:55
SS135@12'	2301499-09	Soil	01/27/23 14:46	01/27/23 17:55

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂


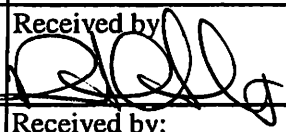
2301499

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Werning 3,4-2 Tank Battery
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *		
1	SS127e12'	11/21/23	815	3			X			X				X	X	X		X	X	X	pH, EC, SAR by saturated paste
2	SS128e12'		1016																		
3	SS129e12'		1147																		
4	SS130e12.5'		1213																		
5	SS131e8'		1234																		
6	SS132e10'		1238																		
7	SS133e12'		1250																		
8	SS134e12'		1408																		
9	SS135e12'	↓	1446	↓				↓					↓	↓	↓		↓	↓	↓		
10	...																				

Relinquished by: 	Date/Time: 11/21/23 1601	Received by: Tasman's Lock Box	Date/Time: 11/27/23 1601	Turn Around Time (Check)	Same Day <input checked="" type="checkbox"/> 72 hours — 24 hours — Standard — 48 hours — Sample Integrity: Temperature Upon Receipt: 8.1 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes: * = PH only * = PAH = Chrysene, Pyrene, Fluorene, 1-m, 2-m. * = Metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman's Lock Box	Date/Time: 12/23 1755	Received by: 	Date/Time: 12/23 1755			
Relinquished by:	Date/Time:	Received by:	Date/Time:			

S₂

Sample Receipt Checklist

S2 Work Order# 2301499Client: PocomanClient Project ID: Warning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

	-			
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Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

8.1

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Custodian Printed Name

Date/Time

1.27.23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS127@12'
2301499-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		69.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS127@12'
2301499-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0711	01/30/23	01/31/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		62.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		87.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.363	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Barium	4.71	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.2			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/27/23 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/01/23 14:14

SS127@12'
2301499-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.50	pH Units	1	BGA0709	01/29/23	01/29/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS128@12'
2301499-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 10:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 10:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		101 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 10:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 10:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		63.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS128@12'
2301499-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 10:16**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGA0711	01/30/23	01/31/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 10:16**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		50.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 10:16**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.265	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Barium	9.54	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 10:16**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.0			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/27/23 10:16**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/01/23 14:14

SS128@12'
2301499-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.28	pH Units	1	BGA0709	01/29/23	01/29/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS129@12'
2301499-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 11:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 11:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		94.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 11:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 11:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		53.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS129@12'
2301499-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 11:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0711	01/30/23	01/31/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 11:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		52.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 11:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.337	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Barium	10.3	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 11:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.3			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/27/23 11:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/01/23 14:14

SS129@12'
2301499-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.24	pH Units	1	BGA0709	01/29/23	01/29/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS130@12.5'
2301499-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 12:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		100 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 12:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		65.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS130@12.5'
2301499-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 12:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0711	01/30/23	01/31/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		47.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 12:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.211	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Barium	4.40	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 12:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.3			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/27/23 12:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS130@12.5'
2301499-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.32	pH Units	1	BGA0709	01/29/23	01/29/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS131@8'
2301499-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		131 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		61.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS131@8'
2301499-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0711	01/30/23	01/31/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		48.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		40.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.24	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Barium	110	0.400		"	"	"	"	"	"	
Selenium	2.04	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	50.5			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/27/23 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/01/23 14:14

SS131@8'
2301499-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	6.88	pH Units	1	BGA0709	01/29/23	01/29/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS132@10'
2301499-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		63.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS132@10'
2301499-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0711	01/30/23	01/31/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		53.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		65.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.59	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Barium	10.5	0.400		"	"	"	"	"	"	
Selenium	0.651	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.1			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/27/23 12:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/01/23 14:14

SS132@10'
2301499-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.84	pH Units	1	BGA0709	01/29/23	01/29/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS133@12'
2301499-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		88.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		68.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS133@12'
2301499-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0711	01/30/23	01/31/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		64.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		84.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Barium	2.56	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	90.5			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/27/23 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/01/23 14:14

SS133@12'
2301499-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.33	pH Units	1	BGA0709	01/29/23	01/29/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS134@12'
2301499-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		98.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		70.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS134@12'
2301499-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0711	01/30/23	01/31/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		62.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		87.8 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.333	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Barium	5.55	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	86.8			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/27/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/01/23 14:14

SS134@12'
2301499-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.40	pH Units	1	BGA0709	01/29/23	01/29/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS135@12'
2301499-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/27/23 14:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0697	01/27/23	01/28/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		128 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		131 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		122 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/27/23 14:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0698	01/27/23	01/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		64.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

SS135@12'
2301499-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/27/23 14:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGA0711	01/30/23	01/31/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/27/23 14:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		60.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		87.8 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/27/23 14:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.312	0.200		mg/kg dry	1	BGA0732	01/30/23	01/31/23	EPA 6020B	
Barium	7.91	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/27/23 14:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.7			%	1	BGA0728	01/30/23	01/30/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/27/23 14:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/01/23 14:14

SS135@12'
2301499-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.94	pH Units	1	BGA0709	01/29/23	01/29/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0697 - EPA 5030 Soil MS

Blank (BGA0697-BLK1)

Prepared: 01/27/23 Analyzed: 01/28/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0588		"	0.0400		147	50-150			
Surrogate: Toluene-d8	0.0384		"	0.0400		95.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0343		"	0.0400		85.6	50-150			

LCS (BGA0697-BS1)

Prepared: 01/27/23 Analyzed: 01/28/23

Benzene	0.0871	0.0020	mg/kg	0.100		87.1	70-130			
Toluene	0.102	0.0050	"	0.100		102	70-130			
Ethylbenzene	0.101	0.0050	"	0.100		101	70-130			
m,p-Xylene	0.237	0.010	"	0.200		119	70-130			
o-Xylene	0.111	0.0050	"	0.100		111	70-130			
1,2,4-Trimethylbenzene	0.0953	0.0050	"	0.100		95.3	70-130			
1,3,5-Trimethylbenzene	0.0992	0.0050	"	0.100		99.2	70-130			
Naphthalene	0.0942	0.0038	"	0.100		94.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0526		"	0.0400		131	50-150			
Surrogate: Toluene-d8	0.0584		"	0.0400		146	50-150			
Surrogate: 4-Bromofluorobenzene	0.0479		"	0.0400		120	50-150			

Matrix Spike (BGA0697-MS1)

Source: 2301492-01

Prepared: 01/27/23 Analyzed: 01/28/23

Benzene	0.0827	0.0020	mg/kg	0.100	ND	82.7	70-130			
Toluene	0.0898	0.0050	"	0.100	ND	89.8	70-130			
Ethylbenzene	0.0976	0.0050	"	0.100	ND	97.6	70-130			
m,p-Xylene	0.202	0.010	"	0.200	ND	101	70-130			
o-Xylene	0.0961	0.0050	"	0.100	ND	96.1	70-130			
1,2,4-Trimethylbenzene	0.0941	0.0050	"	0.100	ND	94.1	70-130			
1,3,5-Trimethylbenzene	0.0975	0.0050	"	0.100	ND	97.5	70-130			
Naphthalene	0.0980	0.0038	"	0.100	ND	98.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0347		"	0.0400		86.7	50-150			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0697 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0697-MSD1)	Source: 2301492-01			Prepared: 01/27/23 Analyzed: 01/28/23						
Benzene	0.0823	0.0020	mg/kg	0.100	ND	82.3	70-130	0.509	30	
Toluene	0.0873	0.0050	"	0.100	ND	87.3	70-130	2.78	30	
Ethylbenzene	0.0967	0.0050	"	0.100	ND	96.7	70-130	0.926	30	
m,p-Xylene	0.201	0.010	"	0.200	ND	100	70-130	0.566	30	
o-Xylene	0.0961	0.0050	"	0.100	ND	96.1	70-130	0.0312	30	
1,2,4-Trimethylbenzene	0.0918	0.0050	"	0.100	ND	91.8	70-130	2.42	30	
1,3,5-Trimethylbenzene	0.0953	0.0050	"	0.100	ND	95.3	70-130	2.30	30	
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130	3.49	30	
Surrogate: 1,2-Dichloroethane-d4	0.0343		"	0.0400		85.6	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		101	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0698 - EPA 3550A

Blank (BGA0698-BLK1)

Prepared & Analyzed: 01/27/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.0		"	12.5		112	30-150			

LCS (BGA0698-BS1)

Prepared & Analyzed: 01/27/23

C10-C28 (DRO)	491	50	mg/kg	500		98.1	70-130			
Surrogate: o-Terphenyl	4.30		"	12.5		34.4	30-150			

Matrix Spike (BGA0698-MS1)

Source: 2301492-01

Prepared & Analyzed: 01/27/23

C10-C28 (DRO)	523	50	mg/kg	500	ND	105	70-130			
Surrogate: o-Terphenyl	13.0		"	12.5		104	30-150			

Matrix Spike Dup (BGA0698-MSD1)

Source: 2301492-01

Prepared & Analyzed: 01/27/23

C10-C28 (DRO)	499	50	mg/kg	500	ND	99.8	70-130	4.73	20	
Surrogate: o-Terphenyl	12.8		"	12.5		103	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0711 - EPA 5030 Soil MS

Blank (BGA0711-BLK1)

Prepared & Analyzed: 01/30/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0331		"	0.0333		99.3	40-150			
Surrogate: Fluoranthene-d10	0.0327		"	0.0333		98.1	40-150			

LCS (BGA0711-BS1)

Prepared & Analyzed: 01/30/23

Acenaphthene	0.0306	0.00500	mg/kg	0.0333		91.7	31-137			
Anthracene	0.0314	0.00500	"	0.0333		94.3	30-120			
Benzo (a) anthracene	0.0331	0.00500	"	0.0333		99.4	30-120			
Benzo (a) pyrene	0.0305	0.00500	"	0.0333		91.5	30-120			
Benzo (b) fluoranthene	0.0297	0.00500	"	0.0333		89.1	30-120			
Benzo (k) fluoranthene	0.0299	0.00500	"	0.0333		89.6	30-120			
Chrysene	0.0307	0.00500	"	0.0333		92.2	30-120			
Dibenz (a,h) anthracene	0.0303	0.00500	"	0.0333		90.8	30-120			
Fluoranthene	0.0312	0.00500	"	0.0333		93.6	30-120			
Fluorene	0.0306	0.00500	"	0.0333		91.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0331	0.00500	"	0.0333		99.4	30-120			
Pyrene	0.0311	0.00500	"	0.0333		93.3	35-142			
1-Methylnaphthalene	0.0275	0.00500	"	0.0333		82.5	35-142			
2-Methylnaphthalene	0.0308	0.00500	"	0.0333		92.4	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0271		"	0.0333		81.2	40-150			
Surrogate: Fluoranthene-d10	0.0320		"	0.0333		96.1	40-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0711 - EPA 5030 Soil MS

Matrix Spike (BGA0711-MS1)

Source: 2301484-01

Prepared & Analyzed: 01/30/23

Acenaphthene	0.0218	0.00500	mg/kg	0.0333	ND	65.5	31-137			
Anthracene	0.0213	0.00500	"	0.0333	ND	63.8	30-120			
Benzo (a) anthracene	0.0246	0.00500	"	0.0333	ND	73.9	30-120			
Benzo (a) pyrene	0.0206	0.00500	"	0.0333	ND	61.9	30-120			
Benzo (b) fluoranthene	0.0185	0.00500	"	0.0333	ND	55.5	30-120			
Benzo (k) fluoranthene	0.0178	0.00500	"	0.0333	ND	53.5	30-120			
Chrysene	0.0203	0.00500	"	0.0333	ND	60.8	30-120			
Dibenz (a,h) anthracene	0.0347	0.00500	"	0.0333	ND	104	30-120			
Fluoranthene	0.0217	0.00500	"	0.0333	ND	65.0	30-120			
Fluorene	0.0220	0.00500	"	0.0333	ND	66.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0330	0.00500	"	0.0333	ND	99.0	30-120			
Pyrene	0.0203	0.00500	"	0.0333	ND	60.9	35-142			
1-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.4	15-130			
2-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.1	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0196		"	0.0333		58.7	40-150			
Surrogate: Fluoranthene-d10	0.0223		"	0.0333		67.0	40-150			

Matrix Spike Dup (BGA0711-MSD1)

Source: 2301484-01

Prepared & Analyzed: 01/30/23

Acenaphthene	0.0169	0.00500	mg/kg	0.0333	ND	50.6	31-137	25.6	30	
Anthracene	0.0154	0.00500	"	0.0333	ND	46.2	30-120	32.0	30	QR-02
Benzo (a) anthracene	0.0174	0.00500	"	0.0333	ND	52.2	30-120	34.5	30	QR-02
Benzo (a) pyrene	0.0153	0.00500	"	0.0333	ND	45.9	30-120	29.7	30	
Benzo (b) fluoranthene	0.0135	0.00500	"	0.0333	ND	40.4	30-120	31.5	30	QR-02
Benzo (k) fluoranthene	0.0140	0.00500	"	0.0333	ND	41.9	30-120	24.2	30	
Chrysene	0.0149	0.00500	"	0.0333	ND	44.7	30-120	30.5	30	QR-02
Dibenz (a,h) anthracene	0.0212	0.00500	"	0.0333	ND	63.6	30-120	48.4	30	QR-02
Fluoranthene	0.0158	0.00500	"	0.0333	ND	47.5	30-120	31.2	30	QR-02
Fluorene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	28.7	30	
Indeno (1,2,3-cd) pyrene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	53.7	30	QR-02
Pyrene	0.0153	0.00500	"	0.0333	ND	45.9	35-142	28.2	30	
1-Methylnaphthalene	0.0228	0.00500	"	0.0333	ND	68.3	15-130	14.0	50	
2-Methylnaphthalene	0.0209	0.00500	"	0.0333	ND	62.8	15-130	6.71	50	
Surrogate: 2-Methylnaphthalene-d10	0.0143		"	0.0333		43.0	40-150			
Surrogate: Fluoranthene-d10	0.0163		"	0.0333		49.0	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0732 - EPA 3050B

Blank (BGA0732-BLK1)

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGA0732-BS1)

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	34.5	0.200	mg/kg wet	40.0	86.2	80-120	QM-05
Barium	31.7	0.400	"	40.0	79.3	80-120	
Selenium	3.37	0.260	"	4.00	84.3	80-120	

Duplicate (BGA0732-DUP1)

Source: 2301499-01

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	0.307	0.200	mg/kg dry	0.363	16.6	20
Barium	5.17	0.400	"	4.71	9.32	20
Selenium	ND	0.260	"	ND		20

Matrix Spike (BGA0732-MS1)

Source: 2301499-01

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	45.9	0.200	mg/kg dry	47.5	0.363	95.9	75-125
Barium	45.6	0.400	"	47.5	4.71	86.1	75-125
Selenium	4.38	0.260	"	4.75	ND	92.2	75-125

Matrix Spike Dup (BGA0732-MSD1)

Source: 2301499-01

Prepared: 01/30/23 Analyzed: 01/31/23

Arsenic	47.4	0.200	mg/kg dry	47.5	0.363	99.0	75-125	3.14	25
Barium	49.9	0.400	"	47.5	4.71	95.2	75-125	9.06	25
Selenium	3.91	0.260	"	4.75	ND	82.4	75-125	11.3	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0728 - General Preparation

Duplicate (BGA0728-DUP1)

Source: 2301492-01

Prepared & Analyzed: 01/30/23

% Solids	82.2	%		82.4		0.274	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/01/23 14:14

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0709 - General Preparation

LCS (BGA0709-BS1)

Prepared & Analyzed: 01/29/23

pH	9.11	pH Units	9.18	99.2	95-105
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Duplicate (BGA0709-DUP1)

Source: 2301499-01

Prepared & Analyzed: 01/29/23

pH	7.47	pH Units	7.50	0.401	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/01/23 14:14

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 03, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2301537

Enclosed are the results of analyses for samples received by Summit Scientific on 01/31/23 17:42. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS136@12'	2301537-01	Soil	01/31/23 14:33	01/31/23 17:42

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2301537

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman	Project Manager: Mark Longhurst
Address: 6855 W 119th Ave	E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020	
Phone: 303-487-1228	Project Name: Warning 3, 4-2 Tank Battery
Sampler Name: Sam Anderson	Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *			
1	SSI36 e 12'	1/31/23	1433	3			X			X				X	X	X		X	X	X		pH, EC, SAR by saturated paste
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10	...																					

Relinquished by:	Date/Time: 1/31/23 1550	Received by: Tasman's Lock Box	Date/Time: 1/31/23 1550	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/>	Notes: * = pH only * = PAHs = chrysene, Pyrene, Fluorene, 1-m, 2-m. * = Metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman's Lock Box	Date/Time: 1/31/23 1742	Received by:	Date/Time: 1/31/23 1742	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 53 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

Sample Receipt Checklist

S2 Work Order# 2301537Client: Pac/Tasman Client Project ID: Werning 34-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 5.3Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Date/Time

1-31-23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

SS136@12'
2301537-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/31/23 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGA0771	01/31/23	01/31/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/31/23 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/31/23 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0772	01/31/23	01/31/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/31/23 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		125 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

SS136@12'
2301537-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/31/23 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0001	02/01/23	02/01/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **01/31/23 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		64.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		73.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/31/23 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGA0775	01/31/23	02/02/23	EPA 6020B	
Barium	3.62	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/31/23 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.6			%	1	BGB0010	02/01/23	02/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/31/23 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/03/23 13:11

SS136@12'
2301537-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.33	pH Units	1	BGB0015	02/01/23	02/01/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0771 - EPA 5030 Soil MS

Blank (BGA0771-BLK1)

Prepared & Analyzed: 01/31/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0544		"	0.0400		136	50-150			
Surrogate: Toluene-d8	0.0556		"	0.0400		139	50-150			
Surrogate: 4-Bromofluorobenzene	0.0543		"	0.0400		136	50-150			

LCS (BGA0771-BS1)

Prepared & Analyzed: 01/31/23

Benzene	0.0813	0.0020	mg/kg	0.100		81.3	70-130			
Toluene	0.110	0.0050	"	0.100		110	70-130			
Ethylbenzene	0.0990	0.0050	"	0.100		99.0	70-130			
m,p-Xylene	0.216	0.010	"	0.200		108	70-130			
o-Xylene	0.104	0.0050	"	0.100		104	70-130			
1,2,4-Trimethylbenzene	0.106	0.0050	"	0.100		106	70-130			
1,3,5-Trimethylbenzene	0.112	0.0050	"	0.100		112	70-130			
Naphthalene	0.0889	0.0038	"	0.100		88.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0493		"	0.0400		123	50-150			
Surrogate: 4-Bromofluorobenzene	0.0451		"	0.0400		113	50-150			

Matrix Spike (BGA0771-MS1)

Source: 2301458-06

Prepared & Analyzed: 01/31/23

Benzene	0.0789	0.0020	mg/kg	0.100	ND	78.9	70-130			
Toluene	0.0754	0.0050	"	0.100	ND	75.4	70-130			
Ethylbenzene	0.0914	0.0050	"	0.100	ND	91.4	70-130			
m,p-Xylene	0.181	0.010	"	0.200	ND	90.4	70-130			
o-Xylene	0.0890	0.0050	"	0.100	ND	89.0	70-130			
1,2,4-Trimethylbenzene	0.0818	0.0050	"	0.100	ND	81.8	70-130			
1,3,5-Trimethylbenzene	0.0856	0.0050	"	0.100	ND	85.6	70-130			
Naphthalene	0.0923	0.0038	"	0.100	ND	92.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0309		"	0.0400		77.3	50-150			
Surrogate: Toluene-d8	0.0360		"	0.0400		90.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		101	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0771 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0771-MSD1)	Source: 2301458-06			Prepared & Analyzed: 01/31/23						
Benzene	0.0800	0.0020	mg/kg	0.100	ND	80.0	70-130	1.40	30	
Toluene	0.0781	0.0050	"	0.100	ND	78.1	70-130	3.40	30	
Ethylbenzene	0.0955	0.0050	"	0.100	ND	95.5	70-130	4.43	30	
m,p-Xylene	0.193	0.010	"	0.200	ND	96.3	70-130	6.23	30	
o-Xylene	0.0921	0.0050	"	0.100	ND	92.1	70-130	3.44	30	
1,2,4-Trimethylbenzene	0.0850	0.0050	"	0.100	ND	85.0	70-130	3.78	30	
1,3,5-Trimethylbenzene	0.0892	0.0050	"	0.100	ND	89.2	70-130	4.15	30	
Naphthalene	0.0928	0.0038	"	0.100	ND	92.8	70-130	0.616	30	
Surrogate: 1,2-Dichloroethane-d4	0.0296		"	0.0400		74.0	50-150			
Surrogate: Toluene-d8	0.0358		"	0.0400		89.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0772 - EPA 3550A

Blank (BGA0772-BLK1)

Prepared & Analyzed: 01/31/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.9		"	12.5		119	30-150			

LCS (BGA0772-BS1)

Prepared & Analyzed: 01/31/23

C10-C28 (DRO)	563	50	mg/kg	500		113	70-130			
Surrogate: o-Terphenyl	16.2		"	12.5		129	30-150			

Matrix Spike (BGA0772-MS1)

Source: 2301458-06

Prepared & Analyzed: 01/31/23

C10-C28 (DRO)	547	50	mg/kg	500	9.56	108	70-130			
Surrogate: o-Terphenyl	15.3		"	12.5		122	30-150			

Matrix Spike Dup (BGA0772-MSD1)

Source: 2301458-06

Prepared: 01/31/23 Analyzed: 02/01/23

C10-C28 (DRO)	533	50	mg/kg	500	9.56	105	70-130	2.62	20	
Surrogate: o-Terphenyl	15.0		"	12.5		120	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0001 - EPA 5030 Soil MS

Blank (BGB0001-BLK1)

Prepared & Analyzed: 02/01/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0284		"	0.0333		85.3		40-150			
Surrogate: Fluoranthene-d10	0.0344		"	0.0333		103		40-150			

LCS (BGB0001-BS1)

Prepared & Analyzed: 02/01/23

Acenaphthene	0.0285	0.00500	mg/kg	0.0333		85.6		31-137			
Anthracene	0.0289	0.00500	"	0.0333		86.8		30-120			
Benzo (a) anthracene	0.0244	0.00500	"	0.0333		73.3		30-120			
Benzo (a) pyrene	0.0200	0.00500	"	0.0333		59.9		30-120			
Benzo (b) fluoranthene	0.0197	0.00500	"	0.0333		59.0		30-120			
Benzo (k) fluoranthene	0.0201	0.00500	"	0.0333		60.3		30-120			
Chrysene	0.0246	0.00500	"	0.0333		73.8		30-120			
Dibenz (a,h) anthracene	0.0185	0.00500	"	0.0333		55.4		30-120			
Fluoranthene	0.0294	0.00500	"	0.0333		88.3		30-120			
Fluorene	0.0293	0.00500	"	0.0333		87.8		30-120			
Indeno (1,2,3-cd) pyrene	0.0202	0.00500	"	0.0333		60.5		30-120			
Pyrene	0.0256	0.00500	"	0.0333		76.8		35-142			
1-Methylnaphthalene	0.0291	0.00500	"	0.0333		87.3		35-142			
2-Methylnaphthalene	0.0277	0.00500	"	0.0333		83.0		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0316		"	0.0333		94.9		40-150			
Surrogate: Fluoranthene-d10	0.0321		"	0.0333		96.2		40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0001 - EPA 5030 Soil MS

Matrix Spike (BGB0001-MS1)

Source: 2301535-01

Prepared & Analyzed: 02/01/23

Acenaphthene	0.0185	0.00500	mg/kg	0.0333	ND	55.4	31-137		
Anthracene	0.0194	0.00500	"	0.0333	ND	58.3	30-120		
Benzo (a) anthracene	0.0175	0.00500	"	0.0333	ND	52.5	30-120		
Benzo (a) pyrene	0.0137	0.00500	"	0.0333	ND	41.0	30-120		
Benzo (b) fluoranthene	0.0143	0.00500	"	0.0333	ND	42.9	30-120		
Benzo (k) fluoranthene	0.0136	0.00500	"	0.0333	ND	40.8	30-120		
Chrysene	0.0163	0.00500	"	0.0333	ND	49.0	30-120		
Dibenz (a,h) anthracene	0.0135	0.00500	"	0.0333	ND	40.4	30-120		
Fluoranthene	0.0218	0.00500	"	0.0333	ND	65.3	30-120		
Fluorene	0.0196	0.00500	"	0.0333	ND	58.8	30-120		
Indeno (1,2,3-cd) pyrene	0.0143	0.00500	"	0.0333	ND	42.9	30-120		
Pyrene	0.0170	0.00500	"	0.0333	ND	51.2	35-142		
1-Methylnaphthalene	0.0180	0.00500	"	0.0333	ND	53.9	15-130		
2-Methylnaphthalene	0.0184	0.00500	"	0.0333	ND	55.2	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0209		"	0.0333		62.7	40-150		
Surrogate: Fluoranthene-d10	0.0226		"	0.0333		67.7	40-150		

Matrix Spike Dup (BGB0001-MSD1)

Source: 2301535-01

Prepared & Analyzed: 02/01/23

Acenaphthene	0.0174	0.00500	mg/kg	0.0333	ND	52.2	31-137	5.91	30
Anthracene	0.0169	0.00500	"	0.0333	ND	50.7	30-120	14.1	30
Benzo (a) anthracene	0.0164	0.00500	"	0.0333	ND	49.1	30-120	6.58	30
Benzo (a) pyrene	0.0155	0.00500	"	0.0333	ND	46.5	30-120	12.6	30
Benzo (b) fluoranthene	0.0150	0.00500	"	0.0333	ND	45.1	30-120	5.04	30
Benzo (k) fluoranthene	0.0143	0.00500	"	0.0333	ND	43.0	30-120	5.27	30
Chrysene	0.0156	0.00500	"	0.0333	ND	46.8	30-120	4.57	30
Dibenz (a,h) anthracene	0.0139	0.00500	"	0.0333	ND	41.7	30-120	3.18	30
Fluoranthene	0.0180	0.00500	"	0.0333	ND	54.0	30-120	19.0	30
Fluorene	0.0175	0.00500	"	0.0333	ND	52.6	30-120	11.1	30
Indeno (1,2,3-cd) pyrene	0.0138	0.00500	"	0.0333	ND	41.4	30-120	3.63	30
Pyrene	0.0156	0.00500	"	0.0333	ND	46.9	35-142	8.71	30
1-Methylnaphthalene	0.0175	0.00500	"	0.0333	ND	52.4	15-130	2.88	50
2-Methylnaphthalene	0.0167	0.00500	"	0.0333	ND	50.0	15-130	9.78	50
Surrogate: 2-Methylnaphthalene-d10	0.0203		"	0.0333		60.9	40-150		
Surrogate: Fluoranthene-d10	0.0187		"	0.0333		56.0	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGA0775 - EPA 3050B

Blank (BGA0775-BLK1)

Prepared: 01/31/23 Analyzed: 02/01/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGA0775-BS1)

Prepared: 01/31/23 Analyzed: 02/02/23

Arsenic	35.9	0.200	mg/kg wet	40.0	89.7	80-120
Barium	33.1	0.400	"	40.0	82.8	80-120
Selenium	3.44	0.260	"	4.00	86.0	80-120

Duplicate (BGA0775-DUP1)

Source: 2301522-01

Prepared: 01/31/23 Analyzed: 02/02/23

Arsenic	2.20	0.200	mg/kg dry	1.98	10.4	20	QR-03
Barium	53.2	0.400	"	40.8	26.3	20	
Selenium	0.451	0.260	"	0.399	12.2	20	

Matrix Spike (BGA0775-MS1)

Source: 2301522-01

Prepared: 01/31/23 Analyzed: 02/02/23

Arsenic	29.3	0.200	mg/kg dry	45.8	1.98	59.8	75-125	QM-05
Barium	76.2	0.400	"	45.8	40.8	77.1	75-125	
Selenium	2.53	0.260	"	4.58	0.399	46.6	75-125	QM-05

Matrix Spike Dup (BGA0775-MSD1)

Source: 2301522-01

Prepared: 01/31/23 Analyzed: 02/02/23

Arsenic	29.8	0.200	mg/kg dry	45.8	1.98	60.7	75-125	1.46	25	QM-05
Barium	75.8	0.400	"	45.8	40.8	76.4	75-125	0.443	25	
Selenium	2.45	0.260	"	4.58	0.399	44.7	75-125	3.45	25	QM-05

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0010 - General Preparation

Duplicate (BGB0010-DUP1)		Source: 2301535-01		Prepared: 02/01/23 Analyzed: 02/02/23	
% Solids	91.6		%	92.3	0.752 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0015 - General Preparation

LCS (BGB0015-BS1)

Prepared & Analyzed: 02/01/23

pH	9.17	pH Units	9.18	99.9	95-105
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Duplicate (BGB0015-DUP1)

Source: 2301537-01

Prepared & Analyzed: 02/01/23

pH	7.40	pH Units	7.33	0.950	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:11

Notes and Definitions

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 03, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2302011

Enclosed are the results of analyses for samples received by Summit Scientific on 02/01/23 17:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS137@8'	2302011-01	Soil	02/01/23 11:53	02/01/23 17:38
SS138@10'	2302011-02	Soil	02/01/23 11:57	02/01/23 17:38
SS139@12'	2302011-03	Soil	02/01/23 12:28	02/01/23 17:38
SS140@12'	2302011-04	Soil	02/01/23 14:05	02/01/23 17:38

Summit Scientific

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Summit Scientific

S₂

2302011

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client:	PDC / Tasman	Project Manager:	Mark Longhurst
Address:	6855 W 119th Ave	E-Mail:	mark.longhurst@PDCE.com
City/State/Zip:	Broomfield/ CO/ 80020		
Phone:	303-487-1228	Project Name:	Warning 3, 4-2 Tank Battery
Sampler Name:	Sam Anderson	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *			
1	SS137eg'	2/1/23	1153	3			X			X				X	X	X		X	X	X		pH, EC, SAR by saturated paste
2	SS138e10'		1157																			
3	SS139e12'		1228																			
4	SS140e12'		1405																			
5																						
6																						
7																						
8																						
9																						
10	...																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes: * = pH only * = PAHs = Chrysene, Pyrene, Fluorene, 1-m, 2-m. * = Metals = Arsenic, Barium, Selenium.
	2/1/23 1100	Tasman's Lock Box	2/1/23 1100	Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	2/1/23 1738		2/1/23 1738	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	Temperature Upon Receipt:	
				Samples Intact:	7.8	

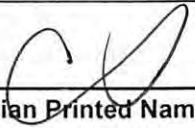
S₂

Sample Receipt Checklist

S2 Work Order# 2302011Client: Doctasman Client Project ID: Werning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____
☐ ☒ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 7.8 Thermometer # (

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

 Custodian Printed Name

2.1.23
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

SS137@8'
2302011-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/01/23 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0021	02/01/23	02/01/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/01/23 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/01/23 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0022	02/01/23	02/01/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/01/23 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		128 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

SS137@8'
2302011-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/01/23 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0024	02/02/23	02/02/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/01/23 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		54.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		42.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/01/23 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.399	0.200		mg/kg dry	1	BGB0023	02/01/23	02/03/23	EPA 6020B	
Barium	67.4	0.400		"	"	"	"	"	"	
Selenium	0.247	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/01/23 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	65.6			%	1	BGB0038	02/02/23	02/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/01/23 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

SS137@8'
2302011-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.31	pH Units	1	BGB0042	02/02/23	02/02/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

SS138@10'
2302011-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/01/23 11:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0021	02/01/23	02/01/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/01/23 11:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		91.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/01/23 11:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0022	02/01/23	02/01/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/01/23 11:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		122 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

SS138@10'
2302011-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/01/23 11:57**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0024	02/02/23	02/02/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/01/23 11:57**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		68.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		78.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/01/23 11:57**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.82	0.200		mg/kg dry	1	BGB0023	02/01/23	02/03/23	EPA 6020B	
Barium	22.7	0.400		"	"	"	"	"	"	
Selenium	1.01	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/01/23 11:57**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.4			%	1	BGB0038	02/02/23	02/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/01/23 11:57**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/03/23 13:17

SS138@10'

2302011-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.91	pH Units	1	BGB0042	02/02/23	02/02/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

SS139@12'
2302011-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/01/23 12:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0021	02/01/23	02/01/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/01/23 12:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		109 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		110 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/01/23 12:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0022	02/01/23	02/01/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/01/23 12:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		117 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

SS139@12'
2302011-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/01/23 12:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0024	02/02/23	02/02/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/01/23 12:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		75.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		95.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/01/23 12:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGB0023	02/01/23	02/03/23	EPA 6020B	
Barium	4.25	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/01/23 12:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.8			%	1	BGB0038	02/02/23	02/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/01/23 12:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/03/23 13:17

SS139@12'

2302011-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.53	pH Units	1	BGB0042	02/02/23	02/02/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

SS140@12'
2302011-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/01/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0021	02/01/23	02/01/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/01/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/01/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0022	02/01/23	02/01/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/01/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		112 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

SS140@12'
2302011-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0024	02/02/23	02/02/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		60.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGB0023	02/01/23	02/03/23	EPA 6020B	
Barium	7.73	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.8			%	1	BGB0038	02/02/23	02/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

SS140@12'
2302011-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.28	pH Units	1	BGB0042	02/02/23	02/02/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0021 - EPA 5030 Soil MS

Blank (BGB0021-BLK1)

Prepared: 02/01/23 Analyzed: 02/02/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0502		"	0.0400		126	50-150			
Surrogate: Toluene-d8	0.0510		"	0.0400		128	50-150			
Surrogate: 4-Bromofluorobenzene	0.0507		"	0.0400		127	50-150			

LCS (BGB0021-BS1)

Prepared: 02/01/23 Analyzed: 02/02/23

Benzene	0.0796	0.0020	mg/kg	0.100		79.6	70-130			
Toluene	0.0820	0.0050	"	0.100		82.0	70-130			
Ethylbenzene	0.0913	0.0050	"	0.100		91.3	70-130			
m,p-Xylene	0.189	0.010	"	0.200		94.7	70-130			
o-Xylene	0.0914	0.0050	"	0.100		91.4	70-130			
1,2,4-Trimethylbenzene	0.0848	0.0050	"	0.100		84.8	70-130			
1,3,5-Trimethylbenzene	0.0896	0.0050	"	0.100		89.6	70-130			
Naphthalene	0.0855	0.0038	"	0.100		85.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0297		"	0.0400		74.2	50-150			
Surrogate: Toluene-d8	0.0383		"	0.0400		95.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.3	50-150			

Matrix Spike (BGB0021-MS1)

Source: 2302011-01

Prepared: 02/01/23 Analyzed: 02/02/23

Benzene	0.0804	0.0020	mg/kg	0.100	ND	80.4	70-130			
Toluene	0.0788	0.0050	"	0.100	ND	78.8	70-130			
Ethylbenzene	0.0919	0.0050	"	0.100	ND	91.9	70-130			
m,p-Xylene	0.186	0.010	"	0.200	ND	93.2	70-130			
o-Xylene	0.0914	0.0050	"	0.100	ND	91.4	70-130			
1,2,4-Trimethylbenzene	0.0831	0.0050	"	0.100	ND	83.1	70-130			
1,3,5-Trimethylbenzene	0.0859	0.0050	"	0.100	ND	85.9	70-130			
Naphthalene	0.0883	0.0038	"	0.100	ND	88.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0338		"	0.0400		84.4	50-150			
Surrogate: Toluene-d8	0.0370		"	0.0400		92.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0021 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0021-MSD1)	Source: 2302011-01			Prepared: 02/01/23 Analyzed: 02/02/23						
Benzene	0.0849	0.0020	mg/kg	0.100	ND	84.9	70-130	5.44	30	
Toluene	0.0823	0.0050	"	0.100	ND	82.3	70-130	4.28	30	
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	8.74	30	
m,p-Xylene	0.200	0.010	"	0.200	ND	99.8	70-130	6.82	30	
o-Xylene	0.0976	0.0050	"	0.100	ND	97.6	70-130	6.64	30	
1,2,4-Trimethylbenzene	0.0853	0.0050	"	0.100	ND	85.3	70-130	2.60	30	
1,3,5-Trimethylbenzene	0.0911	0.0050	"	0.100	ND	91.1	70-130	5.97	30	
Naphthalene	0.0890	0.0038	"	0.100	ND	89.0	70-130	0.812	30	
Surrogate: 1,2-Dichloroethane-d4	0.0318		"	0.0400		79.4	50-150			
Surrogate: Toluene-d8	0.0370		"	0.0400		92.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0022 - EPA 3550A

Blank (BGB0022-BLK1)

Prepared: 02/01/23 Analyzed: 02/02/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.9		"	12.5		119	30-150			

LCS (BGB0022-BS1)

Prepared: 02/01/23 Analyzed: 02/02/23

C10-C28 (DRO)	555	50	mg/kg	500		111	70-130			
Surrogate: o-Terphenyl	14.9		"	12.5		119	30-150			

Matrix Spike (BGB0022-MS1)

Source: 2302011-01

Prepared: 02/01/23 Analyzed: 02/02/23

C10-C28 (DRO)	530	50	mg/kg	500	36.0	98.8	70-130			
Surrogate: o-Terphenyl	14.3		"	12.5		115	30-150			

Matrix Spike Dup (BGB0022-MSD1)

Source: 2302011-01

Prepared: 02/01/23 Analyzed: 02/02/23

C10-C28 (DRO)	575	50	mg/kg	500	36.0	108	70-130	8.18	20	
Surrogate: o-Terphenyl	14.8		"	12.5		119	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0024 - EPA 5030 Soil MS

Blank (BGB0024-BLK1)

Prepared & Analyzed: 02/02/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0290		"	0.0333		87.0		40-150			
Surrogate: Fluoranthene-d10	0.0321		"	0.0333		96.3		40-150			

LCS (BGB0024-BS1)

Prepared & Analyzed: 02/02/23

Acenaphthene	0.0320	0.00500	mg/kg	0.0333		95.9		31-137			
Anthracene	0.0330	0.00500	"	0.0333		99.1		30-120			
Benzo (a) anthracene	0.0278	0.00500	"	0.0333		83.4		30-120			
Benzo (a) pyrene	0.0250	0.00500	"	0.0333		75.1		30-120			
Benzo (b) fluoranthene	0.0253	0.00500	"	0.0333		75.9		30-120			
Benzo (k) fluoranthene	0.0252	0.00500	"	0.0333		75.5		30-120			
Chrysene	0.0290	0.00500	"	0.0333		86.9		30-120			
Dibenz (a,h) anthracene	0.0223	0.00500	"	0.0333		67.0		30-120			
Fluoranthene	0.0329	0.00500	"	0.0333		98.8		30-120			
Fluorene	0.0331	0.00500	"	0.0333		99.3		30-120			
Indeno (1,2,3-cd) pyrene	0.0253	0.00500	"	0.0333		75.9		30-120			
Pyrene	0.0314	0.00500	"	0.0333		94.1		35-142			
1-Methylnaphthalene	0.0288	0.00500	"	0.0333		86.3		35-142			
2-Methylnaphthalene	0.0307	0.00500	"	0.0333		92.1		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0260		"	0.0333		78.1		40-150			
Surrogate: Fluoranthene-d10	0.0336		"	0.0333		101		40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0024 - EPA 5030 Soil MS

Matrix Spike (BGB0024-MS1)

Source: 2301417-01

Prepared & Analyzed: 02/02/23

Acenaphthene	0.0334	0.00500	mg/kg	0.0333	ND	100	31-137		
Anthracene	0.0320	0.00500	"	0.0333	ND	95.9	30-120		
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	ND	76.7	30-120		
Benzo (a) pyrene	0.0199	0.00500	"	0.0333	ND	59.6	30-120		
Benzo (b) fluoranthene	0.0213	0.00500	"	0.0333	ND	63.8	30-120		
Benzo (k) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.7	30-120		
Chrysene	0.0247	0.00500	"	0.0333	ND	74.1	30-120		
Dibenz (a,h) anthracene	0.0176	0.00500	"	0.0333	ND	52.9	30-120		
Fluoranthene	0.0314	0.00500	"	0.0333	ND	94.1	30-120		
Fluorene	0.0335	0.00500	"	0.0333	ND	101	30-120		
Indeno (1,2,3-cd) pyrene	0.0190	0.00500	"	0.0333	ND	57.0	30-120		
Pyrene	0.0276	0.00500	"	0.0333	ND	82.7	35-142		
1-Methylnaphthalene	0.0390	0.00500	"	0.0333	ND	117	15-130		
2-Methylnaphthalene	0.0345	0.00500	"	0.0333	ND	103	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0375		"	0.0333		112	40-150		
Surrogate: Fluoranthene-d10	0.0327		"	0.0333		98.0	40-150		

Matrix Spike Dup (BGB0024-MSD1)

Source: 2301417-01

Prepared & Analyzed: 02/02/23

Acenaphthene	0.0326	0.00500	mg/kg	0.0333	ND	97.9	31-137	2.31	30
Anthracene	0.0298	0.00500	"	0.0333	ND	89.3	30-120	7.11	30
Benzo (a) anthracene	0.0240	0.00500	"	0.0333	ND	72.0	30-120	6.24	30
Benzo (a) pyrene	0.0180	0.00500	"	0.0333	ND	54.0	30-120	9.97	30
Benzo (b) fluoranthene	0.0183	0.00500	"	0.0333	ND	55.0	30-120	14.8	30
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333	ND	53.7	30-120	12.2	30
Chrysene	0.0228	0.00500	"	0.0333	ND	68.5	30-120	7.76	30
Dibenz (a,h) anthracene	0.0162	0.00500	"	0.0333	ND	48.7	30-120	8.24	30
Fluoranthene	0.0280	0.00500	"	0.0333	ND	84.0	30-120	11.4	30
Fluorene	0.0320	0.00500	"	0.0333	ND	96.1	30-120	4.45	30
Indeno (1,2,3-cd) pyrene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	14.1	30
Pyrene	0.0265	0.00500	"	0.0333	ND	79.6	35-142	3.79	30
1-Methylnaphthalene	0.0380	0.00500	"	0.0333	ND	114	15-130	2.56	50
2-Methylnaphthalene	0.0323	0.00500	"	0.0333	ND	97.0	15-130	6.45	50
Surrogate: 2-Methylnaphthalene-d10	0.0338		"	0.0333		101	40-150		
Surrogate: Fluoranthene-d10	0.0290		"	0.0333		87.1	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0023 - EPA 3050B

Blank (BGB0023-BLK1)

Prepared: 02/01/23 Analyzed: 02/03/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGB0023-BS1)

Prepared: 02/01/23 Analyzed: 02/03/23

Arsenic	40.0	0.200	mg/kg wet	40.0	100	80-120
Barium	44.8	0.400	"	40.0	112	80-120
Selenium	4.07	0.260	"	4.00	102	80-120

Duplicate (BGB0023-DUP1)

Source: 2301417-01

Prepared: 02/01/23 Analyzed: 02/03/23

Arsenic	0.762	0.200	mg/kg dry	0.875	13.8	20
Barium	6.67	0.400	"	7.34	9.67	20
Selenium	ND	0.260	"	ND		20

Matrix Spike (BGB0023-MS1)

Source: 2301417-01

Prepared: 02/01/23 Analyzed: 02/03/23

Arsenic	35.8	0.200	mg/kg dry	50.8	0.875	68.8	75-125	QM-05
Barium	47.1	0.400	"	50.8	7.34	78.2	75-125	
Selenium	3.60	0.260	"	5.08	ND	70.9	75-125	QM-05

Matrix Spike Dup (BGB0023-MSD1)

Source: 2301417-01

Prepared: 02/01/23 Analyzed: 02/03/23

Arsenic	38.4	0.200	mg/kg dry	50.8	0.875	73.8	75-125	6.85	25	QM-05
Barium	48.6	0.400	"	50.8	7.34	81.1	75-125	3.04	25	
Selenium	3.64	0.260	"	5.08	ND	71.7	75-125	1.15	25	QM-05

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0038 - General Preparation

Duplicate (BGB0038-DUP1)

Source: 2301417-01

Prepared & Analyzed: 02/02/23

% Solids	79.6	%		78.7		1.15	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/03/23 13:17

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0042 - General Preparation

LCS (BGB0042-BS1)

Prepared & Analyzed: 02/02/23

pH	9.05	pH Units	9.18	98.6	95-105
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Duplicate (BGB0042-DUP1)

Source: 2302011-01

Prepared & Analyzed: 02/02/23

pH	7.21	pH Units	7.31	1.38	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/03/23 13:17

Notes and Definitions

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 06, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2302034

Enclosed are the results of analyses for samples received by Summit Scientific on 02/02/23 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS141@12.5'	2302034-01	Soil	02/02/23 11:36	02/02/23 17:55
SS142@12'	2302034-02	Soil	02/02/23 12:48	02/02/23 17:55
SS143@12'	2302034-03	Soil	02/02/23 13:44	02/02/23 17:55
SS144@12'	2302034-04	Soil	02/02/23 14:54	02/02/23 17:55

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2302034

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client:	PDC / Tasman	Project Manager:	Mark Longhurst
Address:	6855 W 119th Ave	E-Mail:	mark.longhurst@PDCE.com
City/State/Zip:	Broomfield/ CO/ 80020		
Phone:	303-487-1228	Project Name:	Warning 3,4-2 Tank Battery
Sampler Name:	Sam Anderson	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *		
1	SSI141 e12.5'	2/2/23	1136	3			X			X				X	X	X		X	X	X	pH, EC, SAR by saturated paste
2	SSI142 e12'		1248																		
3	SSI143 e12'		1344																		
4	SSI144 e12'	↓	1454	↓																	
5																					
6																					
7																					
8																					
9																					
10	...																				

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes: * = pH only * = PAHs = chrysene, pyrene, fluorene, 1-m, 2-m. * = Metals = Arsenic, Barium, Selenium.
	2/2/23 1628	Tasman's Lock Box	2/2/23 1628	Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	2223 1755		2223 1755	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	Temperature Upon Receipt:	
					79	
				Samples Intact:	Yes No	

S₂

Sample Receipt Checklist

S2 Work Order# 2302034Client: DOC/Tasmanian Client Project ID: Warming 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☒ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 7.9Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

 Custodian Printed Name

2-2-23
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

SS141@12.5'
2302034-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/02/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0052	02/02/23	02/03/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/02/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		93.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/02/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0054	02/02/23	02/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/02/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		108 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

SS141@12.5'
2302034-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/02/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0055	02/03/23	02/03/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/02/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		72.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		69.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/02/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.269	0.200		mg/kg dry	1	BGB0048	02/02/23	02/04/23	EPA 6020B	
Barium	4.42	0.400		"	"	"	"	"	"	
Selenium	0.197	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/02/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.4			%	1	BGB0059	02/03/23	02/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/02/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

SS141@12.5'
2302034-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.75	pH Units	1	BGB0122	02/06/23	02/06/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

SS142@12'
2302034-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/02/23 12:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0052	02/02/23	02/03/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/02/23 12:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		94.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/02/23 12:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0054	02/02/23	02/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/02/23 12:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		106 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

SS142@12'
2302034-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/02/23 12:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0055	02/03/23	02/03/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/02/23 12:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		69.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/02/23 12:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGB0048	02/02/23	02/04/23	EPA 6020B	
Barium	5.56	0.400		"	"	"	"	"	"	
Selenium	0.253	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/02/23 12:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.9			%	1	BGB0059	02/03/23	02/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/02/23 12:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

SS142@12'
2302034-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.75	pH Units	1	BGB0122	02/06/23	02/06/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

SS143@12'
2302034-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/02/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0052	02/02/23	02/03/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/02/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		96.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/02/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0054	02/02/23	02/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/02/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		119 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

SS143@12'
2302034-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/02/23 13:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0055	02/03/23	02/03/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/02/23 13:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		69.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		73.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/02/23 13:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGB0048	02/02/23	02/04/23	EPA 6020B	
Barium	5.55	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/02/23 13:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.9			%	1	BGB0059	02/03/23	02/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/02/23 13:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

SS143@12'
2302034-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.84	pH Units	1	BGB0122	02/06/23	02/06/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

SS144@12'
2302034-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/02/23 14:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0052	02/02/23	02/03/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/02/23 14:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/02/23 14:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0054	02/02/23	02/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/02/23 14:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		120 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

SS144@12'
2302034-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/02/23 14:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0055	02/03/23	02/03/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/02/23 14:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		68.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/02/23 14:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGB0048	02/02/23	02/04/23	EPA 6020B	
Barium	15.0	0.400		"	"	"	"	"	"	
Selenium	0.188	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/02/23 14:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.2			%	1	BGB0059	02/03/23	02/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/02/23 14:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/06/23 16:03

SS144@12'
2302034-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.74	pH Units	1	BGB0122	02/06/23	02/06/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0052 - EPA 5030 Soil MS

Blank (BGB0052-BLK1)

Prepared: 02/02/23 Analyzed: 02/03/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0544		"	0.0400		136	50-150			
Surrogate: Toluene-d8	0.0585		"	0.0400		146	50-150			
Surrogate: 4-Bromofluorobenzene	0.0548		"	0.0400		137	50-150			

LCS (BGB0052-BS1)

Prepared: 02/02/23 Analyzed: 02/03/23

Benzene	0.0813	0.0020	mg/kg	0.100		81.3	70-130			
Toluene	0.113	0.0050	"	0.100		113	70-130			
Ethylbenzene	0.101	0.0050	"	0.100		101	70-130			
m,p-Xylene	0.225	0.010	"	0.200		112	70-130			
o-Xylene	0.106	0.0050	"	0.100		106	70-130			
1,2,4-Trimethylbenzene	0.111	0.0050	"	0.100		111	70-130			
1,3,5-Trimethylbenzene	0.116	0.0050	"	0.100		116	70-130			
Naphthalene	0.0956	0.0038	"	0.100		95.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0508		"	0.0400		127	50-150			
Surrogate: 4-Bromofluorobenzene	0.0451		"	0.0400		113	50-150			

Matrix Spike (BGB0052-MS1)

Source: 2302031-01

Prepared: 02/02/23 Analyzed: 02/03/23

Benzene	0.0797	0.0020	mg/kg	0.100	ND	79.7	70-130			
Toluene	0.0817	0.0050	"	0.100	ND	81.7	70-130			
Ethylbenzene	0.0971	0.0050	"	0.100	ND	97.1	70-130			
m,p-Xylene	0.200	0.010	"	0.200	ND	99.9	70-130			
o-Xylene	0.0959	0.0050	"	0.100	ND	95.9	70-130			
1,2,4-Trimethylbenzene	0.0902	0.0050	"	0.100	ND	90.2	70-130			
1,3,5-Trimethylbenzene	0.0932	0.0050	"	0.100	ND	93.2	70-130			
Naphthalene	0.0987	0.0038	"	0.100	ND	98.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0311		"	0.0400		77.8	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0422		"	0.0400		106	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0052 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0052-MSD1)		Source: 2302031-01			Prepared: 02/02/23 Analyzed: 02/03/23					
Benzene	0.0794	0.0020	mg/kg	0.100	ND	79.4	70-130	0.377	30	
Toluene	0.0819	0.0050	"	0.100	ND	81.9	70-130	0.257	30	
Ethylbenzene	0.0967	0.0050	"	0.100	ND	96.7	70-130	0.434	30	
m,p-Xylene	0.195	0.010	"	0.200	ND	97.6	70-130	2.29	30	
o-Xylene	0.0959	0.0050	"	0.100	ND	95.9	70-130	0.0313	30	
1,2,4-Trimethylbenzene	0.0892	0.0050	"	0.100	ND	89.2	70-130	1.00	30	
1,3,5-Trimethylbenzene	0.0916	0.0050	"	0.100	ND	91.6	70-130	1.72	30	
Naphthalene	0.0984	0.0038	"	0.100	ND	98.4	70-130	0.274	30	
Surrogate: 1,2-Dichloroethane-d4		0.0292	"	0.0400		73.1	50-150			
Surrogate: Toluene-d8		0.0370	"	0.0400		92.5	50-150			
Surrogate: 4-Bromofluorobenzene		0.0396	"	0.0400		98.9	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0054 - EPA 3550A

Blank (BGB0054-BLK1)

Prepared: 02/02/23 Analyzed: 02/03/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	15.3		"	12.5		122	30-150			

LCS (BGB0054-BS1)

Prepared: 02/02/23 Analyzed: 02/03/23

C10-C28 (DRO)	594	50	mg/kg	500		119	70-130			
Surrogate: o-Terphenyl	13.9		"	12.5		111	30-150			

Matrix Spike (BGB0054-MS1)

Source: 2302031-01

Prepared: 02/02/23 Analyzed: 02/03/23

C10-C28 (DRO)	564	50	mg/kg	500	15.8	110	70-130			
Surrogate: o-Terphenyl	14.0		"	12.5		112	30-150			

Matrix Spike Dup (BGB0054-MSD1)

Source: 2302031-01

Prepared: 02/02/23 Analyzed: 02/03/23

C10-C28 (DRO)	596	50	mg/kg	500	15.8	116	70-130	5.46	20	
Surrogate: o-Terphenyl	14.5		"	12.5		116	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result		%REC	Limits	RPD	Notes

Batch BGB0055 - EPA 5030 Soil MS

Blank (BGB0055-BLK1)

Prepared & Analyzed: 02/03/23

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0322	"	0.0333	96.7	40-150
Surrogate: Fluoranthene-d10	0.0270	"	0.0333	81.0	40-150

LCS (BGB0055-BS1)

Prepared & Analyzed: 02/03/23

Acenaphthene	0.0372	0.00500	mg/kg	0.0333	112	31-137
Anthracene	0.0318	0.00500	"	0.0333	95.3	30-120
Benzo (a) anthracene	0.0194	0.00500	"	0.0333	58.2	30-120
Benzo (a) pyrene	0.0185	0.00500	"	0.0333	55.6	30-120
Benzo (b) fluoranthene	0.0176	0.00500	"	0.0333	52.7	30-120
Benzo (k) fluoranthene	0.0224	0.00500	"	0.0333	67.3	30-120
Chrysene	0.0360	0.00500	"	0.0333	108	30-120
Dibenz (a,h) anthracene	0.0245	0.00500	"	0.0333	73.5	30-120
Fluoranthene	0.0357	0.00500	"	0.0333	107	30-120
Fluorene	0.0264	0.00500	"	0.0333	79.2	30-120
Indeno (1,2,3-cd) pyrene	0.0231	0.00500	"	0.0333	69.3	30-120
Pyrene	0.0398	0.00500	"	0.0333	119	35-142
1-Methylnaphthalene	0.0256	0.00500	"	0.0333	76.9	35-142
2-Methylnaphthalene	0.0269	0.00500	"	0.0333	80.7	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0285	"	0.0333	85.4	40-150
Surrogate: Fluoranthene-d10	0.0321	"	0.0333	96.2	40-150

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0055 - EPA 5030 Soil MS

Matrix Spike (BGB0055-MS1)

Source: 2302033-01

Prepared & Analyzed: 02/03/23

Acenaphthene	0.0238	0.00500	mg/kg	0.0333	ND	71.4	31-137		
Anthracene	0.0175	0.00500	"	0.0333	ND	52.5	30-120		
Benzo (a) anthracene	0.0179	0.00500	"	0.0333	ND	53.8	30-120		
Benzo (a) pyrene	0.0148	0.00500	"	0.0333	ND	44.3	30-120		
Benzo (b) fluoranthene	0.0141	0.00500	"	0.0333	ND	42.3	30-120		
Benzo (k) fluoranthene	0.0168	0.00500	"	0.0333	ND	50.4	30-120		
Chrysene	0.0172	0.00500	"	0.0333	ND	51.6	30-120		
Dibenz (a,h) anthracene	0.0182	0.00500	"	0.0333	ND	54.5	30-120		
Fluoranthene	0.0207	0.00500	"	0.0333	ND	62.1	30-120		
Fluorene	0.0155	0.00500	"	0.0333	ND	46.6	30-120		
Indeno (1,2,3-cd) pyrene	0.0148	0.00500	"	0.0333	ND	44.4	30-120		
Pyrene	0.0184	0.00500	"	0.0333	ND	55.1	35-142		
1-Methylnaphthalene	0.0185	0.00500	"	0.0333	ND	55.4	15-130		
2-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0199		"	0.0333		59.8	40-150		
Surrogate: Fluoranthene-d10	0.0179		"	0.0333		53.6	40-150		

Matrix Spike Dup (BGB0055-MSD1)

Source: 2302033-01

Prepared & Analyzed: 02/03/23

Acenaphthene	0.0247	0.00500	mg/kg	0.0333	ND	74.1	31-137	3.66	30	
Anthracene	0.0168	0.00500	"	0.0333	ND	50.4	30-120	4.17	30	
Benzo (a) anthracene	0.0138	0.00500	"	0.0333	ND	41.5	30-120	25.9	30	
Benzo (a) pyrene	0.0135	0.00500	"	0.0333	ND	40.5	30-120	9.08	30	
Benzo (b) fluoranthene	0.0176	0.00500	"	0.0333	ND	52.8	30-120	22.1	30	
Benzo (k) fluoranthene	0.0169	0.00500	"	0.0333	ND	50.6	30-120	0.365	30	
Chrysene	0.0202	0.00500	"	0.0333	ND	60.7	30-120	16.1	30	
Dibenz (a,h) anthracene	0.0157	0.00500	"	0.0333	ND	47.2	30-120	14.5	30	
Fluoranthene	0.0174	0.00500	"	0.0333	ND	52.1	30-120	17.5	30	
Fluorene	0.0181	0.00500	"	0.0333	ND	54.3	30-120	15.4	30	
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333	ND	42.5	30-120	4.47	30	
Pyrene	0.0254	0.00500	"	0.0333	ND	76.3	35-142	32.2	30	QR-02
1-Methylnaphthalene	0.0176	0.00500	"	0.0333	ND	52.9	15-130	4.54	50	
2-Methylnaphthalene	0.0193	0.00500	"	0.0333	ND	58.0	15-130	3.87	50	
Surrogate: 2-Methylnaphthalene-d10	0.0179		"	0.0333		53.6	40-150			
Surrogate: Fluoranthene-d10	0.0158		"	0.0333		47.4	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0048 - EPA 3050B

Blank (BGB0048-BLK1)

Prepared: 02/02/23 Analyzed: 02/03/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGB0048-BS1)

Prepared: 02/02/23 Analyzed: 02/03/23

Arsenic	42.2	0.200	mg/kg wet	40.0	106	80-120
Barium	39.5	0.400	"	40.0	98.7	80-120
Selenium	4.08	0.260	"	4.00	102	80-120

Duplicate (BGB0048-DUP1)

Source: 2302031-01

Prepared: 02/02/23 Analyzed: 02/03/23

Arsenic	1.35	0.200	mg/kg dry	1.38	1.88	20
Barium	77.6	0.400	"	67.0	14.7	20
Selenium	0.406	0.260	"	0.457	11.9	20

Matrix Spike (BGB0048-MS1)

Source: 2302031-01

Prepared: 02/02/23 Analyzed: 02/03/23

Arsenic	43.7	0.200	mg/kg dry	44.3	1.38	95.6	75-125
Barium	117	0.400	"	44.3	67.0	112	75-125
Selenium	4.15	0.260	"	4.43	0.457	83.3	75-125

Matrix Spike Dup (BGB0048-MSD1)

Source: 2302031-01

Prepared: 02/02/23 Analyzed: 02/03/23

Arsenic	43.7	0.200	mg/kg dry	44.3	1.38	95.5	75-125	0.117	25
Barium	117	0.400	"	44.3	67.0	114	75-125	0.672	25
Selenium	4.01	0.260	"	4.43	0.457	80.1	75-125	3.47	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0059 - General Preparation

Duplicate (BGB0059-DUP1)

Source: 2302021-01

Prepared & Analyzed: 02/03/23

% Solids	95.7	%		96.9		1.25	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/06/23 16:03

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0122 - General Preparation

LCS (BGB0122-BS1)

Prepared & Analyzed: 02/06/23

pH	9.10	pH Units	9.18	99.1	95-105
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Duplicate (BGB0122-DUP1)

Source: 2302034-01

Prepared & Analyzed: 02/06/23

pH	7.63	pH Units	7.75	1.56	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/06/23 16:03

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 07, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2302060

Enclosed are the results of analyses for samples received by Summit Scientific on 02/03/23 17:52. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS145@8'	2302060-01	Soil	02/03/23 11:03	02/03/23 17:52
SS146@10'	2302060-02	Soil	02/03/23 11:07	02/03/23 17:52
SS147@12'	2302060-03	Soil	02/03/23 11:15	02/03/23 17:52
SS148@8'	2302060-04	Soil	02/03/23 11:30	02/03/23 17:52
SS149@10'	2302060-05	Soil	02/03/23 11:33	02/03/23 17:52

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2302060

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Wesling 3,4-2 Tank Battery
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs	Metals		
1	SS145e8'	2/3/23	1103	3			X			X				X	X	X		X	X	X	pH, EC, SAR by saturated paste
2	SS146e10'		1107																		
3	SS147e12'		1115																		
4	SS148e8'		1130																		
5	SS149e10'		1133																		
6																					
7																					
8																					
9																					
10	...																				

Relinquished by: <u>Sam Anderson</u>	Date/Time: <u>2/3/23 1459</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>2/3/23 1459</u>	Turn Around Time (Check)	Same Day <u>X</u> 72 hours 24 hours Standard 48 hours Sample Integrity: Temperature Upon Receipt: <u>9.4</u> Samples Intact: <u>(Yes)</u> No	Notes: * = pH only * = PAH's = Chrysene, Pyrene, Fluorene, 1-m, 2-m * = metals = Arsenic, Barium, Selenium.
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time: <u>2/3/23 1752</u>	Received by: <u>[Signature]</u>	Date/Time: <u>2/3/23 1752</u>			
Relinquished by:	Date/Time:	Received by:	Date/Time:			

S₂

Sample Receipt Checklist

S2 Work Order# 2302060Client: Pactasman Client Project ID: Werning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 9.4Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>m/zoe</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Sameday</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.AS
Custodian Printed Name2/3/23
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS145@8'
2302060-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/03/23 11:03**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Benzene	ND	0.0020			mg/kg	1	BGB0097	02/03/23	02/04/23	EPA 8260B	
Toluene	ND	0.0050			"	"	"	"	"	"	
Ethylbenzene	ND	0.0050			"	"	"	"	"	"	
Xylenes (total)	ND	0.010			"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050			"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050			"	"	"	"	"	"	
Naphthalene	ND	0.0038			"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50			"	"	"	"	"	"	

Date Sampled: **02/03/23 11:03**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Surrogate: 1,2-Dichloroethane-d4		101 %			50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %			50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		143 %			50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/03/23 11:03**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
C10-C28 (DRO)	ND	50			mg/kg	1	BGB0098	02/03/23	02/04/23	EPA 8015M	
C28-C36 (ORO)	ND	50			"	"	"	"	"	"	

Date Sampled: **02/03/23 11:03**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Surrogate: o-Terphenyl		114 %			30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS145@8'
2302060-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/03/23 11:03**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0117	02/06/23	02/07/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:03**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/03/23 11:03**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.511	0.200		mg/kg dry	1	BGB0096	02/03/23	02/06/23	EPA 6020B	
Barium	50.8	0.400		"	"	"	"	"	"	
Selenium	0.956	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/03/23 11:03**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	75.5			%	1	BGB0131	02/06/23	02/07/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/03/23 11:03**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS145@8'
2302060-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.99	pH Units	1	BGB0122	02/06/23	02/06/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS146@10'
2302060-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/03/23 11:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0097	02/03/23	02/04/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.058	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.021	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.014	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.81	0.50		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		112 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/03/23 11:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0098	02/03/23	02/04/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		125 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS146@10'
2302060-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/03/23 11:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0117	02/06/23	02/07/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		62.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/03/23 11:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.01	0.200		mg/kg dry	1	BGB0096	02/03/23	02/06/23	EPA 6020B	
Barium	75.5	0.400		"	"	"	"	"	"	
Selenium	0.767	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/03/23 11:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.0			%	1	BGB0131	02/06/23	02/07/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/03/23 11:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/07/23 16:08

SS146@10'
2302060-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.16	pH Units	1	BGB0122	02/06/23	02/06/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS147@12'
2302060-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/03/23 11:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0097	02/03/23	02/04/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.019	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.0080	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.0070	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.72	0.50		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		120 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/03/23 11:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0098	02/03/23	02/04/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS147@12'
2302060-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/03/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0117	02/06/23	02/07/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		63.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/03/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGB0096	02/03/23	02/06/23	EPA 6020B	
Barium	8.23	0.400		"	"	"	"	"	"	
Selenium	0.376	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/03/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	86.4			%	1	BGB0131	02/06/23	02/07/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/03/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/07/23 16:08

SS147@12'
2302060-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.49	pH Units	1	BGB0122	02/06/23	02/06/23	EPA 9045D
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS148@8'
2302060-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0097	02/03/23	02/04/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		113 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0098	02/03/23	02/04/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		110 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS148@8'
2302060-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0117	02/06/23	02/07/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		59.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGB0096	02/03/23	02/06/23	EPA 6020B	
Barium	54.0	0.400		"	"	"	"	"	"	
Selenium	0.922	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	79.3			%	1	BGB0131	02/06/23	02/07/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/07/23 16:08

SS148@8'
2302060-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.41	pH Units	1	BGB0122	02/06/23	02/06/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS149@10'
2302060-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0097	02/03/23	02/04/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		95.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0098	02/03/23	02/04/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		113 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS149@10'
2302060-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0117	02/06/23	02/07/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		82.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		82.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGB0096	02/03/23	02/06/23	EPA 6020B	
Barium	10.7	0.400		"	"	"	"	"	"	
Selenium	0.402	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	91.1			%	1	BGB0131	02/06/23	02/07/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

SS149@10'
2302060-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.43	pH Units	1	BGB0122	02/06/23	02/06/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0097 - EPA 5030 Soil MS

Blank (BGB0097-BLK1)

Prepared: 02/03/23 Analyzed: 02/04/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0500		"	0.0400		125	50-150			
Surrogate: Toluene-d8	0.0470		"	0.0400		118	50-150			
Surrogate: 4-Bromofluorobenzene	0.0511		"	0.0400		128	50-150			

LCS (BGB0097-BS1)

Prepared: 02/03/23 Analyzed: 02/04/23

Benzene	0.0805	0.0020	mg/kg	0.100		80.5	70-130			
Toluene	0.103	0.0050	"	0.100		103	70-130			
Ethylbenzene	0.0992	0.0050	"	0.100		99.2	70-130			
m,p-Xylene	0.217	0.010	"	0.200		108	70-130			
o-Xylene	0.104	0.0050	"	0.100		104	70-130			
1,2,4-Trimethylbenzene	0.105	0.0050	"	0.100		105	70-130			
1,3,5-Trimethylbenzene	0.109	0.0050	"	0.100		109	70-130			
Naphthalene	0.0958	0.0038	"	0.100		95.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0387		"	0.0400		96.7	50-150			
Surrogate: Toluene-d8	0.0457		"	0.0400		114	50-150			
Surrogate: 4-Bromofluorobenzene	0.0444		"	0.0400		111	50-150			

Matrix Spike (BGB0097-MS1)

Source: 2302051-01

Prepared: 02/03/23 Analyzed: 02/04/23

Benzene	0.0788	0.0020	mg/kg	0.100	ND	78.8	70-130			
Toluene	0.0763	0.0050	"	0.100	ND	76.3	70-130			
Ethylbenzene	0.0910	0.0050	"	0.100	ND	91.0	70-130			
m,p-Xylene	0.181	0.010	"	0.200	ND	90.3	70-130			
o-Xylene	0.0891	0.0050	"	0.100	ND	89.1	70-130			
1,2,4-Trimethylbenzene	0.0816	0.0050	"	0.100	ND	81.6	70-130			
1,3,5-Trimethylbenzene	0.0846	0.0050	"	0.100	ND	84.6	70-130			
Naphthalene	0.0944	0.0038	"	0.100	ND	94.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0298		"	0.0400		74.5	50-150			
Surrogate: Toluene-d8	0.0367		"	0.0400		91.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.3	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0097 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0097-MSD1)	Source: 2302051-01			Prepared: 02/03/23 Analyzed: 02/04/23						
Benzene	0.0851	0.0020	mg/kg	0.100	ND	85.1	70-130	7.76	30	
Toluene	0.0813	0.0050	"	0.100	ND	81.3	70-130	6.32	30	
Ethylbenzene	0.0920	0.0050	"	0.100	ND	92.0	70-130	1.02	30	
m,p-Xylene	0.184	0.010	"	0.200	ND	92.2	70-130	2.07	30	
o-Xylene	0.0897	0.0050	"	0.100	ND	89.7	70-130	0.671	30	
1,2,4-Trimethylbenzene	0.0830	0.0050	"	0.100	ND	83.0	70-130	1.75	30	
1,3,5-Trimethylbenzene	0.0865	0.0050	"	0.100	ND	86.5	70-130	2.17	30	
Naphthalene	0.0968	0.0038	"	0.100	ND	96.8	70-130	2.51	30	
Surrogate: 1,2-Dichloroethane-d4	0.0316		"	0.0400		78.9	50-150			
Surrogate: Toluene-d8	0.0370		"	0.0400		92.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		99.9	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0098 - EPA 3550A

Blank (BGB0098-BLK1)

Prepared: 02/03/23 Analyzed: 02/04/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	15.6		"	12.5		125	30-150			

LCS (BGB0098-BS1)

Prepared: 02/03/23 Analyzed: 02/04/23

C10-C28 (DRO)	472	50	mg/kg	500		94.4	70-130			
Surrogate: o-Terphenyl	13.7		"	12.5		109	30-150			

Matrix Spike (BGB0098-MS1)

Source: 2302051-01

Prepared: 02/03/23 Analyzed: 02/04/23

C10-C28 (DRO)	440	50	mg/kg	500	29.5	82.2	70-130			
Surrogate: o-Terphenyl	13.0		"	12.5		104	30-150			

Matrix Spike Dup (BGB0098-MSD1)

Source: 2302051-01

Prepared: 02/03/23 Analyzed: 02/04/23

C10-C28 (DRO)	449	50	mg/kg	500	29.5	84.0	70-130	2.03	20	
Surrogate: o-Terphenyl	13.2		"	12.5		105	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0117 - EPA 5030 Soil MS

Blank (BGB0117-BLK1)

Prepared & Analyzed: 02/06/23

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0323	"	0.0333	96.9	40-150
Surrogate: Fluoranthene-d10	0.0287	"	0.0333	86.2	40-150

LCS (BGB0117-BS1)

Prepared & Analyzed: 02/06/23

Acenaphthene	0.0340	0.00500	mg/kg	0.0333	102	31-137
Anthracene	0.0305	0.00500	"	0.0333	91.5	30-120
Benzo (a) anthracene	0.0244	0.00500	"	0.0333	73.3	30-120
Benzo (a) pyrene	0.0304	0.00500	"	0.0333	91.1	30-120
Benzo (b) fluoranthene	0.0272	0.00500	"	0.0333	81.7	30-120
Benzo (k) fluoranthene	0.0352	0.00500	"	0.0333	106	30-120
Chrysene	0.0296	0.00500	"	0.0333	88.9	30-120
Dibenz (a,h) anthracene	0.0339	0.00500	"	0.0333	102	30-120
Fluoranthene	0.0341	0.00500	"	0.0333	102	30-120
Fluorene	0.0361	0.00500	"	0.0333	108	30-120
Indeno (1,2,3-cd) pyrene	0.0307	0.00500	"	0.0333	92.1	30-120
Pyrene	0.0289	0.00500	"	0.0333	86.8	35-142
1-Methylnaphthalene	0.0305	0.00500	"	0.0333	91.5	35-142
2-Methylnaphthalene	0.0325	0.00500	"	0.0333	97.4	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0291	"	0.0333	87.2	40-150
Surrogate: Fluoranthene-d10	0.0342	"	0.0333	103	40-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0117 - EPA 5030 Soil MS

Matrix Spike (BGB0117-MS1)

Source: 2302043-01

Prepared & Analyzed: 02/06/23

Acenaphthene	0.0177	0.00500	mg/kg	0.0333	ND	53.0	31-137		
Anthracene	0.0175	0.00500	"	0.0333	ND	52.5	30-120		
Benzo (a) anthracene	0.0136	0.00500	"	0.0333	ND	40.9	30-120		
Benzo (a) pyrene	0.0148	0.00500	"	0.0333	ND	44.4	30-120		
Benzo (b) fluoranthene	0.0157	0.00500	"	0.0333	ND	47.1	30-120		
Benzo (k) fluoranthene	0.0177	0.00500	"	0.0333	ND	53.2	30-120		
Chrysene	0.0137	0.00500	"	0.0333	ND	41.2	30-120		
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333	ND	46.0	30-120		
Fluoranthene	0.0188	0.00500	"	0.0333	ND	56.4	30-120		
Fluorene	0.0164	0.00500	"	0.0333	ND	49.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0143	0.00500	"	0.0333	ND	42.9	30-120		
Pyrene	0.0157	0.00500	"	0.0333	ND	47.1	35-142		
1-Methylnaphthalene	0.0189	0.00500	"	0.0333	ND	56.6	15-130		
2-Methylnaphthalene	0.0200	0.00500	"	0.0333	ND	60.0	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0203		"	0.0333		60.8	40-150		
Surrogate: Fluoranthene-d10	0.0184		"	0.0333		55.2	40-150		

Matrix Spike Dup (BGB0117-MSD1)

Source: 2302043-01

Prepared & Analyzed: 02/06/23

Acenaphthene	0.0178	0.00500	mg/kg	0.0333	ND	53.4	31-137	0.744	30
Anthracene	0.0145	0.00500	"	0.0333	ND	43.5	30-120	18.8	30
Benzo (a) anthracene	0.0167	0.00500	"	0.0333	ND	50.2	30-120	20.5	30
Benzo (a) pyrene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	10.9	30
Benzo (b) fluoranthene	0.0173	0.00500	"	0.0333	ND	51.8	30-120	9.54	30
Benzo (k) fluoranthene	0.0180	0.00500	"	0.0333	ND	54.1	30-120	1.79	30
Chrysene	0.0153	0.00500	"	0.0333	ND	46.0	30-120	11.0	30
Dibenz (a,h) anthracene	0.0165	0.00500	"	0.0333	ND	49.4	30-120	7.19	30
Fluoranthene	0.0143	0.00500	"	0.0333	ND	42.8	30-120	27.4	30
Fluorene	0.0155	0.00500	"	0.0333	ND	46.5	30-120	5.54	30
Indeno (1,2,3-cd) pyrene	0.0158	0.00500	"	0.0333	ND	47.5	30-120	10.1	30
Pyrene	0.0178	0.00500	"	0.0333	ND	53.3	35-142	12.2	30
1-Methylnaphthalene	0.0180	0.00500	"	0.0333	ND	54.1	15-130	4.53	50
2-Methylnaphthalene	0.0187	0.00500	"	0.0333	ND	56.1	15-130	6.69	50
Surrogate: 2-Methylnaphthalene-d10	0.0193		"	0.0333		57.9	40-150		
Surrogate: Fluoranthene-d10	0.0153		"	0.0333		45.9	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0096 - EPA 3050B

Blank (BGB0096-BLK1)

Prepared: 02/03/23 Analyzed: 02/06/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGB0096-BS1)

Prepared: 02/03/23 Analyzed: 02/06/23

Arsenic	47.6	0.200	mg/kg wet	40.0	119	80-120
Barium	47.3	0.400	"	40.0	118	80-120
Selenium	4.29	0.260	"	4.00	107	80-120

Duplicate (BGB0096-DUP1)

Source: 2301460-10

Prepared: 02/03/23 Analyzed: 02/06/23

Arsenic	0.749	0.200	mg/kg dry	0.773	3.09	20
Barium	27.7	0.400	"	33.4	18.8	20
Selenium	0.218	0.260	"	0.333	41.6	20

QR-01

Matrix Spike (BGB0096-MS1)

Source: 2301460-10

Prepared: 02/03/23 Analyzed: 02/06/23

Arsenic	44.3	0.200	mg/kg dry	41.7	0.773	104	75-125
Barium	72.0	0.400	"	41.7	33.4	92.5	75-125
Selenium	4.08	0.260	"	4.17	0.333	90.0	75-125

Matrix Spike Dup (BGB0096-MSD1)

Source: 2301460-10

Prepared: 02/03/23 Analyzed: 02/06/23

Arsenic	47.3	0.200	mg/kg dry	41.7	0.773	112	75-125	6.64	25
Barium	74.5	0.400	"	41.7	33.4	98.5	75-125	3.45	25
Selenium	4.32	0.260	"	4.17	0.333	95.7	75-125	5.67	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BGB0131 - General Preparation

Duplicate (BGB0131-DUP1)		Source: 2302029-01			Prepared: 02/06/23 Analyzed: 02/07/23					
% Solids	83.3		%		83.1			0.183	20	

Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0122 - General Preparation

LCS (BGB0122-BS1)

Prepared & Analyzed: 02/06/23

pH	9.10	pH Units	9.18	99.1	95-105
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Duplicate (BGB0122-DUP1)

Source: 2302034-01

Prepared & Analyzed: 02/06/23

pH	7.63	pH Units	7.75	1.56	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/23 16:08

Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 10, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000


Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2302149

Enclosed are the results of analyses for samples received by Summit Scientific on 02/08/23 18:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS150@12'	2302149-01	Soil	02/08/23 09:49	02/08/23 18:20
SS151@12'	2302149-02	Soil	02/08/23 12:09	02/08/23 18:20
SS152@12'	2302149-03	Soil	02/08/23 13:04	02/08/23 18:20
SS153@8'	2302149-04	Soil	02/08/23 13:34	02/08/23 18:20
SS154@10'	2302149-05	Soil	02/08/23 13:37	02/08/23 18:20
BKG05@8'	2302149-06	Soil	02/08/23 10:09	02/08/23 18:20
BKG05@10'	2302149-07	Soil	02/08/23 10:26	02/08/23 18:20
BKG06@2'	2302149-08	Soil	02/08/23 11:24	02/08/23 18:20
BKG06@5'	2302149-09	Soil	02/08/23 11:36	02/08/23 18:20
BKG06@8'	2302149-10	Soil	02/08/23 11:48	02/08/23 18:20
BKG06@10'	2302149-11	Soil	02/08/23 11:55	02/08/23 18:20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

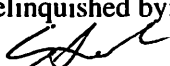
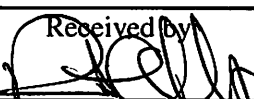

Client: PDC / Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W 119th Ave		Project Manager: Mark Longhurst		Company: PDC Energy	
City/State/Zip: Broomfield / CO / 80220		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
Phone: 303-487-1228		Project Name: Werning 3,4-2 Tank Battery		AFE#:	
Sampler Name: S. Anderson		Project Number:		PO/Billing Codes:	
				Contact: Mark Longhurst	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Other	Analysis Requested							Special Instructions
					HCl	HNO3	None	Other	Water	Soil			BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAHs	Metals	
1	SS150 e12'	2/8/23	949	3			X			X			X	X	X		X	X	X	
2	SS151 e12'		1209																	
3	SS152 e12'		1304																	
4	SS153 e8'		1334																	
5	SS154 e10'		1337																	
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <u>S.A.H.</u>	Date/Time: <u>2/8/23 1505</u>	Received by: <u>Tasman Lockbox</u>	Date/Time: <u>2/8/23 1505</u>	TAT Business Days	Field DO	Notes: X = pH only X = PAHs = chrysene, Pyrene, Fluorene, 1-m, 2-m X = metals = Arsenic, Barium, Selenium	
				Same Day	X		Field EC
Relinquished by: <u>Tasman Lockbox</u>	Date/Time: <u>2/8/23 1820</u>	Received by: <u>[Signature]</u>	Date/Time: <u>2/8/23 1820</u>	1 Day			Field ORP
				2 Days			Field pH
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days			Field Temp.
				Standard		Field Turb.	
Temperature Upon Receipt: <u>8.60</u>	Corrected Temperature: <u>[Signature]</u>	IR gun #: <u>1</u>	HNO3 lot #: <u></u>				

Send Data To:		Send Invoice To:	
Client: PDC / Tasman	Project Manager: Mark Longhurst	Company: PDC Energy	
Address: 6855 W 119th Ave	E-Mail: mark.longhurst@PDCE.com	Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220		AFE#:	
Phone: 303-487-1228	Project Name: Warning 3,4-2 Tank Battery	PO/Billing Codes:	
Sampler Name: S. Anderson	Project Number:	Contact: Mark Longhurst	

					Preservative				Matrix			Analysis Requested							Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAHs	Metals	
1	BX606 e 8'	2/9/23	1009	1			X			X							X	X	X	
2	BX606 e 10'		1026																	
3	BX606 e 2'		1124																	
4	BX606 e 5'		1136																	
5	BX606 e 9'		1148																	
6	BX606 e 10'		1155																	
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 1505 2/18/23	Received by: Tasman Lockbox	Date/Time: 2/16/23 1505	TAT Business Days	Field DO	Notes: * = pH only * = Metals = Arsenic, Cadmium, Selenium.
Relinquished by: Tasman Lockbox	Date/Time: 2825 1820	Received by: 	Date/Time: 2825 1820	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	X Field Turb.	
Temperature Upon Receipt: 86	Corrected Temperature: 	IR gun #:		HNO3 lot #:		

S₂

2/2

Sample Receipt Checklist

S2 Work Order#

2302149

Client: Poc/Tosman

Client Project ID:

Warning 3/4-2-tank Battery

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☐

Other

☐

Temp (°C)

8.6

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Date/Time

2-8-23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

SS150@12'
2302149-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/08/23 09:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0230	02/08/23	02/09/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/08/23 09:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		79.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		90.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/08/23 09:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0231	02/08/23	02/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/08/23 09:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		99.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

SS150@12'
2302149-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/08/23 09:49**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0239	02/09/23	02/10/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/08/23 09:49**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/08/23 09:49**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.211	0.200		mg/kg dry	1	BGB0237	02/08/23	02/09/23	EPA 6020B	
Barium	2.16	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/08/23 09:49**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.0			%	1	BGB0255	02/09/23	02/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/08/23 09:49**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/10/23 12:21

SS150@12'
2302149-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction							
pH	6.78	pH Units	1	BGB0263	02/09/23	02/09/23	EPA 9045D

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

SS151@12'
2302149-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/08/23 12:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0230	02/08/23	02/09/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/08/23 12:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		80.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		92.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/08/23 12:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0231	02/08/23	02/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/08/23 12:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		104 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

SS151@12'
2302149-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/08/23 12:09**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0239	02/09/23	02/10/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/08/23 12:09**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		74.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/08/23 12:09**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.284	0.200		mg/kg dry	1	BGB0237	02/08/23	02/09/23	EPA 6020B	
Barium	9.76	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/08/23 12:09**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.0			%	1	BGB0255	02/09/23	02/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/08/23 12:09**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/10/23 12:21

SS151@12'
2302149-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.26	pH Units	1	BGB0263	02/09/23	02/09/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

SS152@12'
2302149-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/08/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0230	02/08/23	02/09/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/08/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		88.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		89.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/08/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0231	02/08/23	02/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/08/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		112 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

SS152@12'
2302149-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/08/23 13:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0239	02/09/23	02/10/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/08/23 13:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		48.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/08/23 13:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.31	0.200		mg/kg dry	1	BGB0237	02/08/23	02/09/23	EPA 6020B	
Barium	79.2	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/08/23 13:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	75.9			%	1	BGB0255	02/09/23	02/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/08/23 13:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/10/23 12:21

SS152@12'
2302149-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.45	pH Units	1	BGB0263	02/09/23	02/09/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

SS153@8'
2302149-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/08/23 13:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0230	02/08/23	02/09/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/08/23 13:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		76.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		91.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/08/23 13:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0231	02/08/23	02/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/08/23 13:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		110 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

SS153@8'
2302149-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/08/23 13:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0239	02/09/23	02/10/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/08/23 13:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		54.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/08/23 13:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.910	0.200		mg/kg dry	1	BGB0237	02/08/23	02/09/23	EPA 6020B	
Barium	12.3	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/08/23 13:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.1			%	1	BGB0255	02/09/23	02/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/08/23 13:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/10/23 12:21

SS153@8'
2302149-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.37	pH Units	1	BGB0263	02/09/23	02/09/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

SS154@10'
2302149-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/08/23 13:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0230	02/08/23	02/09/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/08/23 13:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		86.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/08/23 13:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0231	02/08/23	02/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/08/23 13:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		86.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

SS154@10'
2302149-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/08/23 13:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0239	02/09/23	02/10/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/08/23 13:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		72.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		65.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/08/23 13:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.488	0.200		mg/kg dry	1	BGB0237	02/08/23	02/09/23	EPA 6020B	
Barium	14.9	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/08/23 13:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.2			%	1	BGB0255	02/09/23	02/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/08/23 13:37**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

SS154@10'
2302149-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.54	pH Units	1	BGB0263	02/09/23	02/09/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

BKG05@8'
2302149-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/08/23 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	5.02	0.200		mg/kg dry	1	BGB0237	02/08/23	02/09/23	EPA 6020B	
Barium	242	0.400		"	"	"	"	"	"	
Selenium	1.23	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/08/23 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	69.8			%	1	BGB0255	02/09/23	02/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/08/23 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.47			pH Units	1	BGB0263	02/09/23	02/09/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

BKG05@10'
2302149-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/08/23 10:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.882	0.200		mg/kg dry	1	BGB0237	02/08/23	02/09/23	EPA 6020B	
Barium	27.1	0.400		"	"	"	"	"	"	
Selenium	0.354	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/08/23 10:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.7			%	1	BGB0255	02/09/23	02/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/08/23 10:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.15			pH Units	1	BGB0263	02/09/23	02/09/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

BKG06@2'
2302149-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/08/23 11:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.610	0.200		mg/kg dry	1	BGB0237	02/08/23	02/09/23	EPA 6020B	
Barium	12.5	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/08/23 11:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	93.1			%	1	BGB0255	02/09/23	02/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/08/23 11:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.95			pH Units	1	BGB0263	02/09/23	02/09/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

BKG06@5'
2302149-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/08/23 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.452	0.200		mg/kg dry	1	BGB0237	02/08/23	02/09/23	EPA 6020B	
Barium	16.1	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/08/23 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.8			%	1	BGB0255	02/09/23	02/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/08/23 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.49			pH Units	1	BGB0263	02/09/23	02/09/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

BKG06@8'
2302149-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/08/23 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.686	0.200		mg/kg dry	1	BGB0237	02/08/23	02/09/23	EPA 6020B	
Barium	30.4	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/08/23 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.8			%	1	BGB0255	02/09/23	02/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/08/23 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.65			pH Units	1	BGB0263	02/09/23	02/09/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

BKG06@10'
2302149-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/08/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.35	0.200		mg/kg dry	1	BGB0237	02/08/23	02/09/23	EPA 6020B	
Barium	35.1	0.400		"	"	"	"	"	"	
Selenium	0.654	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/08/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	79.4			%	1	BGB0255	02/09/23	02/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/08/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.54			pH Units	1	BGB0263	02/09/23	02/09/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0230 - EPA 5030 Soil MS

Blank (BGB0230-BLK1)

Prepared: 02/08/23 Analyzed: 02/09/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0443		"	0.0400		111	50-150			
Surrogate: Toluene-d8	0.0428		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0530		"	0.0400		133	50-150			

LCS (BGB0230-BS1)

Prepared: 02/08/23 Analyzed: 02/09/23

Benzene	0.0758	0.0020	mg/kg	0.100		75.8	70-130			
Toluene	0.116	0.0050	"	0.100		116	70-130			
Ethylbenzene	0.122	0.0050	"	0.100		122	70-130			
m,p-Xylene	0.236	0.010	"	0.200		118	70-130			
o-Xylene	0.122	0.0050	"	0.100		122	70-130			
1,2,4-Trimethylbenzene	0.0950	0.0050	"	0.100		95.0	70-130			
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
Naphthalene	0.0901	0.0038	"	0.100		90.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0305		"	0.0400		76.2	50-150			
Surrogate: Toluene-d8	0.0470		"	0.0400		118	50-150			
Surrogate: 4-Bromofluorobenzene	0.0547		"	0.0400		137	50-150			

Matrix Spike (BGB0230-MS1)

Source: 2302131-01

Prepared: 02/08/23 Analyzed: 02/09/23

Benzene	0.0849	0.0020	mg/kg	0.100	ND	84.9	70-130			
Toluene	0.0999	0.0050	"	0.100	ND	99.9	70-130			
Ethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130			
m,p-Xylene	0.215	0.010	"	0.200	ND	107	70-130			
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130			
1,2,4-Trimethylbenzene	0.0951	0.0050	"	0.100	ND	95.1	70-130			
1,3,5-Trimethylbenzene	0.0989	0.0050	"	0.100	ND	98.9	70-130			
Naphthalene	0.0912	0.0038	"	0.100	ND	91.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0243		"	0.0400		60.8	50-150			
Surrogate: Toluene-d8	0.0294		"	0.0400		73.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.3	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0230 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0230-MSD1)	Source: 2302131-01			Prepared: 02/08/23 Analyzed: 02/09/23						
Benzene	0.0818	0.0020	mg/kg	0.100	ND	81.8	70-130	3.78	30	
Toluene	0.0827	0.0050	"	0.100	ND	82.7	70-130	18.8	30	
Ethylbenzene	0.0981	0.0050	"	0.100	ND	98.1	70-130	8.55	30	
m,p-Xylene	0.219	0.010	"	0.200	ND	109	70-130	1.90	30	
o-Xylene	0.0808	0.0050	"	0.100	ND	80.8	70-130	21.6	30	
1,2,4-Trimethylbenzene	0.0835	0.0050	"	0.100	ND	83.5	70-130	12.9	30	
1,3,5-Trimethylbenzene	0.0848	0.0050	"	0.100	ND	84.8	70-130	15.3	30	
Naphthalene	0.0897	0.0038	"	0.100	ND	89.7	70-130	1.69	30	
Surrogate: 1,2-Dichloroethane-d4	0.0267		"	0.0400		66.8	50-150			
Surrogate: Toluene-d8	0.0359		"	0.0400		89.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0327		"	0.0400		81.8	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0231 - EPA 3550A

Blank (BGB0231-BLK1)

Prepared: 02/08/23 Analyzed: 02/09/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.6		"	12.5		108	30-150			

LCS (BGB0231-BS1)

Prepared: 02/08/23 Analyzed: 02/09/23

C10-C28 (DRO)	434	50	mg/kg	500		86.7	70-130			
Surrogate: o-Terphenyl	11.2		"	12.5		89.5	30-150			

Matrix Spike (BGB0231-MS1)

Source: 2302131-01

Prepared: 02/08/23 Analyzed: 02/09/23

C10-C28 (DRO)	453	50	mg/kg	500	21.7	86.2	70-130			
Surrogate: o-Terphenyl	12.2		"	12.5		97.4	30-150			

Matrix Spike Dup (BGB0231-MSD1)

Source: 2302131-01

Prepared: 02/08/23 Analyzed: 02/09/23

C10-C28 (DRO)	450	50	mg/kg	500	21.7	85.6	70-130	0.703	20	
Surrogate: o-Terphenyl	12.9		"	12.5		103	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0239 - EPA 5030 Soil MS

Blank (BGB0239-BLK1)

Prepared & Analyzed: 02/09/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0290		"	0.0333		87.1	40-150			
Surrogate: Fluoranthene-d10	0.0253		"	0.0333		75.9	40-150			

LCS (BGB0239-BS1)

Prepared & Analyzed: 02/09/23

Acenaphthene	0.0272	0.00500	mg/kg	0.0333		81.6	31-137			
Anthracene	0.0254	0.00500	"	0.0333		76.1	30-120			
Benzo (a) anthracene	0.0223	0.00500	"	0.0333		66.9	30-120			
Benzo (a) pyrene	0.0373	0.00500	"	0.0333		112	30-120			
Benzo (b) fluoranthene	0.0325	0.00500	"	0.0333		97.6	30-120			
Benzo (k) fluoranthene	0.0383	0.00500	"	0.0333		115	30-120			
Chrysene	0.0273	0.00500	"	0.0333		82.0	30-120			
Dibenz (a,h) anthracene	0.0351	0.00500	"	0.0333		105	30-120			
Fluoranthene	0.0299	0.00500	"	0.0333		89.8	30-120			
Fluorene	0.0280	0.00500	"	0.0333		84.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0339	0.00500	"	0.0333		102	30-120			
Pyrene	0.0281	0.00500	"	0.0333		84.2	35-142			
1-Methylnaphthalene	0.0262	0.00500	"	0.0333		78.6	35-142			
2-Methylnaphthalene	0.0289	0.00500	"	0.0333		86.7	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0283		"	0.0333		85.0	40-150			
Surrogate: Fluoranthene-d10	0.0288		"	0.0333		86.4	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0239 - EPA 5030 Soil MS

Matrix Spike (BGB0239-MS1)

Source: 2302131-01

Prepared & Analyzed: 02/09/23

Acenaphthene	0.0181	0.00500	mg/kg	0.0333	ND	54.2	31-137		
Anthracene	0.0159	0.00500	"	0.0333	ND	47.8	30-120		
Benzo (a) anthracene	0.0158	0.00500	"	0.0333	ND	47.4	30-120		
Benzo (a) pyrene	0.0212	0.00500	"	0.0333	ND	63.6	30-120		
Benzo (b) fluoranthene	0.0224	0.00500	"	0.0333	ND	67.1	30-120		
Benzo (k) fluoranthene	0.0259	0.00500	"	0.0333	ND	77.7	30-120		
Chrysene	0.0154	0.00500	"	0.0333	ND	46.2	30-120		
Dibenz (a,h) anthracene	0.0220	0.00500	"	0.0333	ND	65.9	30-120		
Fluoranthene	0.0193	0.00500	"	0.0333	ND	57.9	30-120		
Fluorene	0.0171	0.00500	"	0.0333	ND	51.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0198	0.00500	"	0.0333	ND	59.5	30-120		
Pyrene	0.0177	0.00500	"	0.0333	ND	53.0	35-142		
1-Methylnaphthalene	0.0145	0.00500	"	0.0333	ND	43.5	15-130		
2-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	46.0	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0171		"	0.0333		51.4	40-150		
Surrogate: Fluoranthene-d10	0.0189		"	0.0333		56.7	40-150		

Matrix Spike Dup (BGB0239-MSD1)

Source: 2302131-01

Prepared: 02/09/23 Analyzed: 02/10/23

Acenaphthene	0.0185	0.00500	mg/kg	0.0333	ND	55.6	31-137	2.52	30
Anthracene	0.0155	0.00500	"	0.0333	ND	46.5	30-120	2.79	30
Benzo (a) anthracene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	3.45	30
Benzo (a) pyrene	0.0222	0.00500	"	0.0333	ND	66.6	30-120	4.62	30
Benzo (b) fluoranthene	0.0183	0.00500	"	0.0333	ND	55.0	30-120	19.8	30
Benzo (k) fluoranthene	0.0245	0.00500	"	0.0333	ND	73.4	30-120	5.67	30
Chrysene	0.0149	0.00500	"	0.0333	ND	44.7	30-120	3.25	30
Dibenz (a,h) anthracene	0.0224	0.00500	"	0.0333	ND	67.1	30-120	1.74	30
Fluoranthene	0.0175	0.00500	"	0.0333	ND	52.4	30-120	10.1	30
Fluorene	0.0169	0.00500	"	0.0333	ND	50.6	30-120	1.40	30
Indeno (1,2,3-cd) pyrene	0.0205	0.00500	"	0.0333	ND	61.5	30-120	3.24	30
Pyrene	0.0157	0.00500	"	0.0333	ND	47.2	35-142	11.6	30
1-Methylnaphthalene	0.0169	0.00500	"	0.0333	ND	50.6	15-130	15.1	50
2-Methylnaphthalene	0.0182	0.00500	"	0.0333	ND	54.7	15-130	17.3	50
Surrogate: 2-Methylnaphthalene-d10	0.0171		"	0.0333		51.2	40-150		
Surrogate: Fluoranthene-d10	0.0169		"	0.0333		50.7	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0237 - EPA 3050B

Blank (BGB0237-BLK1)

Prepared: 02/08/23 Analyzed: 02/09/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGB0237-BS1)

Prepared: 02/08/23 Analyzed: 02/09/23

Arsenic	39.2	0.200	mg/kg wet	40.0	98.0	80-120
Barium	39.4	0.400	"	40.0	98.5	80-120
Selenium	3.73	0.260	"	4.00	93.4	80-120

Duplicate (BGB0237-DUP1)

Source: 2302145-01

Prepared: 02/08/23 Analyzed: 02/09/23

Arsenic	0.604	0.200	mg/kg wet	0.620	2.55	20	QR-03
Barium	30.0	0.400	"	22.1	30.2	20	
Selenium	ND	0.260	"	ND		20	

Matrix Spike (BGB0237-MS1)

Source: 2302145-01

Prepared: 02/08/23 Analyzed: 02/09/23

Arsenic	38.1	0.200	mg/kg wet	40.0	0.620	93.7	75-125
Barium	59.1	0.400	"	40.0	22.1	92.4	75-125
Selenium	3.65	0.260	"	4.00	ND	91.4	75-125

Matrix Spike Dup (BGB0237-MSD1)

Source: 2302145-01

Prepared: 02/08/23 Analyzed: 02/09/23

Arsenic	39.4	0.200	mg/kg wet	40.0	0.620	96.9	75-125	3.36	25
Barium	60.9	0.400	"	40.0	22.1	96.8	75-125	2.97	25
Selenium	3.82	0.260	"	4.00	ND	95.5	75-125	4.46	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0255 - General Preparation

Duplicate (BGB0255-DUP1)

Source: 2302149-01

Prepared & Analyzed: 02/09/23

% Solids	94.6	%		95.0		0.390	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/10/23 12:21

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0263 - General Preparation

LCS (BGB0263-BS1)

Prepared & Analyzed: 02/09/23

pH	9.00	pH Units	9.18	98.0	95-105
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Duplicate (BGB0263-DUP1)

Source: 2302149-01

Prepared & Analyzed: 02/09/23

pH	7.21	pH Units	6.78	6.15	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/10/23 12:21

Notes and Definitions

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 14, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2302192

Enclosed are the results of analyses for samples received by Summit Scientific on 02/09/23 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

ANALYTICAL REPORT FOR SAMPLES

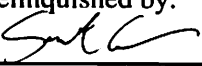
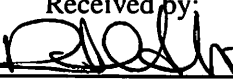

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS155@10'	2302192-01	Soil	02/09/23 07:39	02/09/23 18:00
SS156@8'	2302192-02	Soil	02/09/23 10:14	02/09/23 18:00
SS157@10'	2302192-03	Soil	02/09/23 10:18	02/09/23 18:00
SS158@12'	2302192-04	Soil	02/09/23 10:30	02/09/23 18:00
SS159@12'	2302192-05	Soil	02/09/23 12:47	02/09/23 18:00
SS160@12'	2302192-06	Soil	02/09/23 14:52	02/09/23 18:00

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Warning 3,4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested							Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ✖	PAHs ✖	Metals ✖		
1	SS155c 10'	2/9/23	739	3			X			X			X	X	X		X	X	X		
2	SS156c 8'	↓	1014	↓			↓			↓			↓	↓	↓		↓	↓	↓		
3	SS157c 10'		1018	↓			↓			↓			↓	↓	↓		↓	↓	↓		
4	SS158c 12'		1030	↓			↓			↓			↓	↓	↓		↓	↓	↓		
5	SS159c 12'		1247	↓			↓			↓			↓	↓	↓		↓	↓	↓		
6	SS160c 12'	✓	1452	✓			✓			✓			✓	✓	✓		✓	✓	✓		
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 2/9/23 1130	Received by: Tasman Lockbox	Date/Time: 2/9/23 1630	TAT Business Days	Field DO	Notes: SS = pH only PAHs = Chrysene, Pyrene, Fluorene, 1-m, 2-m metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman Lockbox	Date/Time: 2/9/23 1800	Received by: 	Date/Time: 2/9/23 1800	Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 7.0	Corrected Temperature: 	IR gun #: 1	HNO3 lot #:	Standard	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2302192Client: DOC Tasmann Client Project ID: Werning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #:
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 7.0 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ice</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Date/Time

2-8-23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS155@10'
2302192-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/09/23 07:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0281	02/09/23	02/09/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/09/23 07:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		77.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/09/23 07:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0282	02/09/23	02/09/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/09/23 07:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		109 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS155@10'
2302192-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/09/23 07:39**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0296	02/10/23	02/11/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/09/23 07:39**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		69.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/09/23 07:39**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.20	0.200		mg/kg dry	1	BGB0305	02/10/23	02/12/23	EPA 6020B	
Barium	26.1	0.400		"	"	"	"	"	"	
Selenium	1.27	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/09/23 07:39**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	71.9			%	1	BGB0310	02/10/23	02/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/09/23 07:39**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS155@10'
2302192-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.73	pH Units	1	BGB0314	02/10/23	02/10/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS156@8'
2302192-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/09/23 10:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0281	02/09/23	02/10/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/09/23 10:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		78.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/09/23 10:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0282	02/09/23	02/09/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/09/23 10:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		108 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS156@8'
2302192-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/09/23 10:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0296	02/10/23	02/11/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/09/23 10:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		70.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/09/23 10:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGB0305	02/10/23	02/12/23	EPA 6020B	
Barium	33.1	0.400		"	"	"	"	"	"	
Selenium	0.431	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/09/23 10:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.7			%	1	BGB0310	02/10/23	02/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/09/23 10:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/14/23 12:50

SS156@8'
2302192-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.20	pH Units	1	BGB0314	02/10/23	02/10/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS157@10'
2302192-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/09/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0281	02/09/23	02/10/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/09/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		77.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/09/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0282	02/09/23	02/09/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/09/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		99.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS157@10'
2302192-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/09/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0296	02/10/23	02/11/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/09/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		79.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		92.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/09/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.04	0.200		mg/kg dry	1	BGB0305	02/10/23	02/12/23	EPA 6020B	
Barium	17.8	0.400		"	"	"	"	"	"	
Selenium	0.336	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/09/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.1			%	1	BGB0310	02/10/23	02/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/09/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/14/23 12:50

SS157@10'
2302192-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.14	pH Units	1	BGB0314	02/10/23	02/10/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS158@12'
2302192-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/09/23 10:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0281	02/09/23	02/10/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.076	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.62	0.50		"	"	"	"	"	"	

Date Sampled: **02/09/23 10:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/09/23 10:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0282	02/09/23	02/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/09/23 10:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		116 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS158@12'
2302192-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/09/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0296	02/10/23	02/11/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/09/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		64.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/09/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.32	0.200		mg/kg dry	1	BGB0305	02/10/23	02/12/23	EPA 6020B	
Barium	25.4	0.400		"	"	"	"	"	"	
Selenium	0.341	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/09/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.6			%	1	BGB0310	02/10/23	02/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/09/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/14/23 12:50

SS158@12'
2302192-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.39	pH Units	1	BGB0314	02/10/23	02/10/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS159@12'
2302192-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/09/23 12:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0281	02/09/23	02/10/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/09/23 12:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		76.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/09/23 12:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0282	02/09/23	02/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/09/23 12:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		108 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS159@12'
2302192-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/09/23 12:47**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0296	02/10/23	02/11/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/09/23 12:47**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		61.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/09/23 12:47**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.487	0.200		mg/kg dry	1	BGB0305	02/10/23	02/12/23	EPA 6020B	
Barium	2.69	0.400		"	"	"	"	"	"	
Selenium	0.240	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/09/23 12:47**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.9			%	1	BGB0310	02/10/23	02/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/09/23 12:47**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS159@12'
2302192-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.31	pH Units	1	BGB0314	02/10/23	02/10/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS160@12'
2302192-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/09/23 14:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0281	02/09/23	02/10/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/09/23 14:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		110 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/09/23 14:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0282	02/09/23	02/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/09/23 14:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		113 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS160@12'
2302192-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/09/23 14:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0296	02/10/23	02/11/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/09/23 14:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		72.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		80.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/09/23 14:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGB0305	02/10/23	02/12/23	EPA 6020B	
Barium	3.87	0.400		"	"	"	"	"	"	
Selenium	0.182	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/09/23 14:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.7			%	1	BGB0310	02/10/23	02/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/09/23 14:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

SS160@12'
2302192-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.32	pH Units	1	BGB0314	02/10/23	02/10/23	EPA 9045D
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0281 - EPA 5030 Soil MS

Blank (BGB0281-BLK1)

Prepared: 02/09/23 Analyzed: 02/10/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0369		"	0.0400		92.2	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0366		"	0.0400		91.5	50-150			

LCS (BGB0281-BS1)

Prepared: 02/09/23 Analyzed: 02/10/23

Benzene	0.0835	0.0020	mg/kg	0.100		83.5	70-130			
Toluene	0.0800	0.0050	"	0.100		80.0	70-130			
Ethylbenzene	0.102	0.0050	"	0.100		102	70-130			
m,p-Xylene	0.207	0.010	"	0.200		103	70-130			
o-Xylene	0.0969	0.0050	"	0.100		96.9	70-130			
1,2,4-Trimethylbenzene	0.0941	0.0050	"	0.100		94.1	70-130			
1,3,5-Trimethylbenzene	0.0970	0.0050	"	0.100		97.0	70-130			
Naphthalene	0.0821	0.0038	"	0.100		82.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0236		"	0.0400		58.9	50-150			
Surrogate: Toluene-d8	0.0326		"	0.0400		81.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0241		"	0.0400		60.2	50-150			

Matrix Spike (BGB0281-MS1)

Source: 2302168-01

Prepared: 02/09/23 Analyzed: 02/10/23

Benzene	0.0746	0.0020	mg/kg	0.100	ND	74.6	70-130			
Toluene	0.100	0.0050	"	0.100	ND	100	70-130			
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130			
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130			
o-Xylene	0.0960	0.0050	"	0.100	ND	96.0	70-130			
1,2,4-Trimethylbenzene	0.0948	0.0050	"	0.100	ND	94.8	70-130			
1,3,5-Trimethylbenzene	0.0983	0.0050	"	0.100	ND	98.3	70-130			
Naphthalene	0.0893	0.0038	"	0.100	ND	89.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0360		"	0.0400		90.1	50-150			
Surrogate: Toluene-d8	0.0418		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0440		"	0.0400		110	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0281 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0281-MSD1)	Source: 2302168-01			Prepared: 02/09/23 Analyzed: 02/10/23						
Benzene	0.0791	0.0020	mg/kg	0.100	ND	79.1	70-130	5.94	30	
Toluene	0.0952	0.0050	"	0.100	ND	95.2	70-130	5.04	30	
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	1.90	30	
m,p-Xylene	0.212	0.010	"	0.200	ND	106	70-130	1.87	30	
o-Xylene	0.0955	0.0050	"	0.100	ND	95.5	70-130	0.501	30	
1,2,4-Trimethylbenzene	0.0914	0.0050	"	0.100	ND	91.4	70-130	3.61	30	
1,3,5-Trimethylbenzene	0.0947	0.0050	"	0.100	ND	94.7	70-130	3.73	30	
Naphthalene	0.0857	0.0038	"	0.100	ND	85.7	70-130	4.11	30	
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0419		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0282 - EPA 3550A

Blank (BGB0282-BLK1)

Prepared: 02/09/23 Analyzed: 02/10/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	15.9		"	12.5		127	30-150			

LCS (BGB0282-BS1)

Prepared: 02/09/23 Analyzed: 02/10/23

C10-C28 (DRO)	503	50	mg/kg	500		101	70-130			
Surrogate: o-Terphenyl	15.8		"	12.5		126	30-150			

Matrix Spike (BGB0282-MS1)

Source: 2302167-01

Prepared: 02/09/23 Analyzed: 02/10/23

C10-C28 (DRO)	533	50	mg/kg	500	43.0	98.0	70-130			
Surrogate: o-Terphenyl	15.9		"	12.5		127	30-150			

Matrix Spike Dup (BGB0282-MSD1)

Source: 2302167-01

Prepared: 02/09/23 Analyzed: 02/10/23

C10-C28 (DRO)	540	50	mg/kg	500	43.0	99.4	70-130	1.36	20	
Surrogate: o-Terphenyl	16.0		"	12.5		128	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0296 - EPA 5030 Soil MS

Blank (BGB0296-BLK1)

Prepared & Analyzed: 02/10/23

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0237	"	0.0333	71.0	40-150
Surrogate: Fluoranthene-d10	0.0304	"	0.0333	91.2	40-150

LCS (BGB0296-BS1)

Prepared & Analyzed: 02/10/23

Acenaphthene	0.0314	0.00500	mg/kg	0.0333	94.2	31-137
Anthracene	0.0329	0.00500	"	0.0333	98.6	30-120
Benzo (a) anthracene	0.0299	0.00500	"	0.0333	89.7	30-120
Benzo (a) pyrene	0.0268	0.00500	"	0.0333	80.4	30-120
Benzo (b) fluoranthene	0.0278	0.00500	"	0.0333	83.3	30-120
Benzo (k) fluoranthene	0.0272	0.00500	"	0.0333	81.5	30-120
Chrysene	0.0302	0.00500	"	0.0333	90.7	30-120
Dibenz (a,h) anthracene	0.0223	0.00500	"	0.0333	66.9	30-120
Fluoranthene	0.0320	0.00500	"	0.0333	96.1	30-120
Fluorene	0.0317	0.00500	"	0.0333	95.0	30-120
Indeno (1,2,3-cd) pyrene	0.0240	0.00500	"	0.0333	72.0	30-120
Pyrene	0.0323	0.00500	"	0.0333	96.8	35-142
1-Methylnaphthalene	0.0311	0.00500	"	0.0333	93.4	35-142
2-Methylnaphthalene	0.0304	0.00500	"	0.0333	91.3	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0293	"	0.0333	88.0	40-150
Surrogate: Fluoranthene-d10	0.0314	"	0.0333	94.2	40-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0296 - EPA 5030 Soil MS

Matrix Spike (BGB0296-MS1)

Source: 2302163-01

Prepared & Analyzed: 02/10/23

Acenaphthene	0.0193	0.00500	mg/kg	0.0333	ND	57.9	31-137		
Anthracene	0.0192	0.00500	"	0.0333	ND	57.6	30-120		
Benzo (a) anthracene	0.0187	0.00500	"	0.0333	ND	56.1	30-120		
Benzo (a) pyrene	0.0164	0.00500	"	0.0333	ND	49.3	30-120		
Benzo (b) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.1	30-120		
Benzo (k) fluoranthene	0.0161	0.00500	"	0.0333	ND	48.4	30-120		
Chrysene	0.0177	0.00500	"	0.0333	ND	53.0	30-120		
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333	ND	46.9	30-120		
Fluoranthene	0.0190	0.00500	"	0.0333	ND	57.0	30-120		
Fluorene	0.0191	0.00500	"	0.0333	ND	57.4	30-120		
Indeno (1,2,3-cd) pyrene	0.0144	0.00500	"	0.0333	ND	43.2	30-120		
Pyrene	0.0193	0.00500	"	0.0333	ND	57.9	35-142		
1-Methylnaphthalene	0.0204	0.00500	"	0.0333	ND	61.3	15-130		
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	62.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0179		"	0.0333		53.8	40-150		
Surrogate: Fluoranthene-d10	0.0201		"	0.0333		60.2	40-150		

Matrix Spike Dup (BGB0296-MSD1)

Source: 2302163-01

Prepared & Analyzed: 02/10/23

Acenaphthene	0.0197	0.00500	mg/kg	0.0333	ND	59.2	31-137	2.33	30
Anthracene	0.0203	0.00500	"	0.0333	ND	61.0	30-120	5.73	30
Benzo (a) anthracene	0.0182	0.00500	"	0.0333	ND	54.7	30-120	2.53	30
Benzo (a) pyrene	0.0156	0.00500	"	0.0333	ND	46.8	30-120	5.13	30
Benzo (b) fluoranthene	0.0154	0.00500	"	0.0333	ND	46.3	30-120	5.81	30
Benzo (k) fluoranthene	0.0153	0.00500	"	0.0333	ND	46.0	30-120	5.06	30
Chrysene	0.0174	0.00500	"	0.0333	ND	52.1	30-120	1.72	30
Dibenz (a,h) anthracene	0.0158	0.00500	"	0.0333	ND	47.4	30-120	1.17	30
Fluoranthene	0.0195	0.00500	"	0.0333	ND	58.6	30-120	2.74	30
Fluorene	0.0195	0.00500	"	0.0333	ND	58.6	30-120	2.16	30
Indeno (1,2,3-cd) pyrene	0.0141	0.00500	"	0.0333	ND	42.2	30-120	2.49	30
Pyrene	0.0190	0.00500	"	0.0333	ND	57.1	35-142	1.44	30
1-Methylnaphthalene	0.0208	0.00500	"	0.0333	ND	62.5	15-130	1.83	50
2-Methylnaphthalene	0.0182	0.00500	"	0.0333	ND	54.7	15-130	13.8	50
Surrogate: 2-Methylnaphthalene-d10	0.0171		"	0.0333		51.4	40-150		
Surrogate: Fluoranthene-d10	0.0188		"	0.0333		56.5	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0305 - EPA 3050B

Blank (BGB0305-BLK1)

Prepared: 02/10/23 Analyzed: 02/12/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGB0305-BS1)

Prepared: 02/10/23 Analyzed: 02/12/23

Arsenic	45.5	0.200	mg/kg wet	40.0	114	80-120
Barium	42.2	0.400	"	40.0	105	80-120
Selenium	4.19	0.260	"	4.00	105	80-120

Duplicate (BGB0305-DUP1)

Source: 2302186-01

Prepared: 02/10/23 Analyzed: 02/12/23

Arsenic	1.37	0.200	mg/kg dry	0.940	37.0	20	QR-03
Barium	25.7	0.400	"	23.4	9.20	20	
Selenium	0.281	0.260	"	0.293	4.14	20	

Matrix Spike (BGB0305-MS1)

Source: 2302186-01

Prepared: 02/10/23 Analyzed: 02/12/23

Arsenic	47.9	0.200	mg/kg dry	41.3	0.940	114	75-125
Barium	70.0	0.400	"	41.3	23.4	113	75-125
Selenium	4.04	0.260	"	4.13	0.293	90.7	75-125

Matrix Spike Dup (BGB0305-MSD1)

Source: 2302186-01

Prepared: 02/10/23 Analyzed: 02/12/23

Arsenic	48.6	0.200	mg/kg dry	41.3	0.940	115	75-125	1.43	25
Barium	69.5	0.400	"	41.3	23.4	112	75-125	0.735	25
Selenium	4.47	0.260	"	4.13	0.293	101	75-125	10.3	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0310 - General Preparation

Duplicate (BGB0310-DUP1)		Source: 2302165-01		Prepared: 02/10/23 Analyzed: 02/13/23	
% Solids	83.1		%	83.8	0.876 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/14/23 12:50

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0314 - General Preparation

LCS (BGB0314-BS1)

Prepared & Analyzed: 02/10/23

pH	9.00	pH Units	9.18	98.0	95-105
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Duplicate (BGB0314-DUP1)

Source: 2302165-02

Prepared & Analyzed: 02/10/23

pH	8.03	pH Units	8.13	1.24	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/14/23 12:50

Notes and Definitions

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 15, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2302231

Enclosed are the results of analyses for samples received by Summit Scientific on 02/10/23 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS161@12'	2302231-01	Soil	02/10/23 10:24	02/10/23 17:30
SS162@8'	2302231-02	Soil	02/10/23 10:50	02/10/23 17:30
SS163@10'	2302231-03	Soil	02/10/23 10:53	02/10/23 17:30
BKG07@2'	2302231-04	Soil	02/10/23 11:09	02/10/23 17:30
BKG07@5'	2302231-05	Soil	02/10/23 11:15	02/10/23 17:30
BKG07@8'	2302231-06	Soil	02/10/23 11:26	02/10/23 17:30
BKG07@10'	2302231-07	Soil	02/10/23 11:39	02/10/23 17:30
BKG08@2'	2302231-08	Soil	02/10/23 11:51	02/10/23 17:30
BKG08@5'	2302231-09	Soil	02/10/23 12:01	02/10/23 17:30
BKG08@8'	2302231-10	Soil	02/10/23 12:09	02/10/23 17:30
BKG08@10'	2302231-11	Soil	02/10/23 12:15	02/10/23 17:30

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

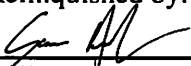
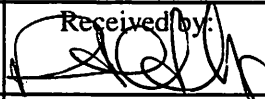

Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Werning 3,4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested							Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ★	PAHs ★	Metals ★		
1	SS161e12'	2/10/23	1024	3			X			X			X	X	X		X	X	X		
2	SS162e8'	↓	1050	↓			↓			↓			↓	↓	↓		↓	↓	↓		
3	SS163e10'	↓	1053	↓			↓			↓			↓	↓	↓		↓	↓	↓		
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>S. Anderson</u>	Date/Time: <u>2/10/23 1331</u>	Received by: <u>Tasman Lockbox</u>	Date/Time: <u>2/10/23 1331</u>	TAT Business Days	Field DO	Notes: * = pH only * = PAH's: Chrysene, B[a]P, Fluorene, 1-m, 2-m. * = Metals: Arsenic, Barium, Selenium.
Relinquished by: <u>Tasman Lockbox</u>	Date/Time: <u>2/10/23 1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>2/10/23 1730</u>	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day <input type="checkbox"/>	Field ORP	
				2 Days <input type="checkbox"/>	Field pH	
				3 Days <input type="checkbox"/>	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard <input type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: <u>8.7</u>	Corrected Temperature: <u>0</u>	IR gun #: <u>0</u>	HNO3 lot #: <u></u>			

Client: PDC / Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W 119th Ave		Project Manager: Mark Longhurst		Company: PDC Energy	
City/State/Zip: Broomfield / CO / 80220		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
Phone: 303-487-1228		Project Name: Weaming 3,4-2 Tank Battery		AFE#:	
Sampler Name: S. Anderson		Project Number:		PO/Billing Codes:	
				Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested							Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ★	PAHs	Metals ★		
1	BK607e2'	2/10/23	1109	1			X			X							X		X		
2	BK607e5'	2/10/23	1115	↓			↓			↓							↓		↓		
3	BK607e8'	↓	1126	↓			↓			↓							↓		↓		
4	BK607e10'	↓	1139	↓			↓			↓							↓		↓		
5	BK608e2'	↓	1151	↓			↓			↓							↓		↓		
6	BK608e5'	↓	1201	↓			↓			↓							↓		↓		
7	BK608e8'	↓	1209	↓			↓			↓							↓		↓		
8	BK608e10'	↓	1215	↓			↓			↓							↓		↓		
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 2/10/23 1331	Received by: Tasman Lockbox	Date/Time: 2/10/23 1331	TAT Business Days	Field DO	Notes: * = Just PH * = Metals = Arsenic, Barium, Selenium.
Relinquished by: tasmanlockbox	Date/Time: 2/10/23 1730	Received by: 	Date/Time: 2/10/23 1730	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	X Field Turb.	
Temperature Upon Receipt: 87	Corrected Temperature: 	IR gun #: 1	HNO3 lot #:			

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2302331Client: PPC Hasman Client Project ID: Werning 34-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.7 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

 Custodian Printed Name

2/10/23
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

SS161@12'
2302231-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/10/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0327	02/10/23	02/11/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/10/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		92.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/10/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0328	02/10/23	02/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/10/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		89.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

SS161@12'
2302231-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/10/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0341	02/13/23	02/14/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/10/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		46.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		86.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/10/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.305	0.200		mg/kg dry	1	BGB0330	02/10/23	02/13/23	EPA 6020B	
Barium	22.6	0.400		"	"	"	"	"	"	
Selenium	0.471	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.0			%	1	BGB0335	02/12/23	02/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/10/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

SS161@12'
2302231-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.72	pH Units	1	BGB0359	02/13/23	02/13/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

SS162@8'
2302231-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/10/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0327	02/10/23	02/11/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/10/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		79.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		80.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/10/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0328	02/10/23	02/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/10/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		74.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

SS162@8'
2302231-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/10/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0341	02/13/23	02/14/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/10/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		55.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		83.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/10/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.03	0.200		mg/kg dry	1	BGB0330	02/10/23	02/13/23	EPA 6020B	
Barium	12.7	0.400		"	"	"	"	"	"	
Selenium	0.715	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.5			%	1	BGB0335	02/12/23	02/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/10/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/15/23 13:59

SS162@8'
2302231-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.52	pH Units	1	BGB0359	02/13/23	02/13/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

SS163@10'
2302231-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/10/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0327	02/10/23	02/11/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/10/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		75.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/10/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0328	02/10/23	02/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/10/23 10:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		76.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

SS163@10'
2302231-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/10/23 10:53**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0341	02/13/23	02/14/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/10/23 10:53**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		83.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/10/23 10:53**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGB0330	02/10/23	02/13/23	EPA 6020B	
Barium	8.91	0.400		"	"	"	"	"	"	
Selenium	0.304	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 10:53**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.1			%	1	BGB0335	02/12/23	02/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/10/23 10:53**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/15/23 13:59

SS163@10'
2302231-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.33	pH Units	1	BGB0359	02/13/23	02/13/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

BKG07@2'
2302231-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/10/23 11:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.426	0.200		mg/kg dry	1	BGB0330	02/10/23	02/13/23	EPA 6020B	
Barium	15.2	0.400		"	"	"	"	"	"	
Selenium	0.389	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 11:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.3			%	1	BGB0335	02/12/23	02/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/10/23 11:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.25			pH Units	1	BGB0359	02/13/23	02/13/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

BKG07@5'
2302231-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/10/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.59	0.200		mg/kg dry	1	BGB0330	02/10/23	02/13/23	EPA 6020B	
Barium	128	0.400		"	"	"	"	"	"	
Selenium	1.01	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.6			%	1	BGB0335	02/12/23	02/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/10/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.32			pH Units	1	BGB0359	02/13/23	02/13/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

BKG07@8'
2302231-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/10/23 11:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.249	0.200		mg/kg dry	1	BGB0330	02/10/23	02/13/23	EPA 6020B	
Barium	41.9	0.400		"	"	"	"	"	"	
Selenium	1.12	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 11:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	77.3			%	1	BGB0335	02/12/23	02/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/10/23 11:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.16			pH Units	1	BGB0359	02/13/23	02/13/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

BKG07@10'
2302231-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/10/23 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.250	0.200		mg/kg dry	1	BGB0330	02/10/23	02/13/23	EPA 6020B	
Barium	10.0	0.400		"	"	"	"	"	"	
Selenium	0.368	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.5			%	1	BGB0335	02/12/23	02/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/10/23 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.41			pH Units	1	BGB0359	02/13/23	02/13/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

BKG08@2'
2302231-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/10/23 11:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.822	0.200		mg/kg dry	1	BGB0330	02/10/23	02/13/23	EPA 6020B	
Barium	16.4	0.400		"	"	"	"	"	"	
Selenium	0.339	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 11:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	97.4			%	1	BGB0335	02/12/23	02/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/10/23 11:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.82			pH Units	1	BGB0359	02/13/23	02/13/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

BKG08@5'
2302231-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/10/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.797	0.200		mg/kg dry	1	BGB0330	02/10/23	02/13/23	EPA 6020B	
Barium	63.6	0.400		"	"	"	"	"	"	
Selenium	0.634	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.5			%	1	BGB0335	02/12/23	02/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/10/23 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.14			pH Units	1	BGB0359	02/13/23	02/13/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

BKG08@8'
2302231-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/10/23 12:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.771	0.200		mg/kg dry	1	BGB0330	02/10/23	02/13/23	EPA 6020B	
Barium	27.9	0.400		"	"	"	"	"	"	
Selenium	0.469	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 12:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.2			%	1	BGB0335	02/12/23	02/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/10/23 12:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.74			pH Units	1	BGB0359	02/13/23	02/13/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

BKG08@10'
2302231-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/10/23 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.415	0.200		mg/kg dry	1	BGB0330	02/10/23	02/13/23	EPA 6020B	
Barium	9.03	0.400		"	"	"	"	"	"	
Selenium	0.212	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	79.9			%	1	BGB0335	02/12/23	02/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/10/23 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.51			pH Units	1	BGB0359	02/13/23	02/13/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0327 - EPA 5030 Soil MS

Blank (BGB0327-BLK1)

Prepared: 02/10/23 Analyzed: 02/11/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0343		"	0.0400		85.7	50-150			
Surrogate: Toluene-d8	0.0469		"	0.0400		117	50-150			
Surrogate: 4-Bromofluorobenzene	0.0482		"	0.0400		120	50-150			

LCS (BGB0327-BS1)

Prepared: 02/10/23 Analyzed: 02/11/23

Benzene	0.0824	0.0020	mg/kg	0.100		82.4	70-130			
Toluene	0.0887	0.0050	"	0.100		88.7	70-130			
Ethylbenzene	0.102	0.0050	"	0.100		102	70-130			
m,p-Xylene	0.209	0.010	"	0.200		105	70-130			
o-Xylene	0.0971	0.0050	"	0.100		97.1	70-130			
1,2,4-Trimethylbenzene	0.0978	0.0050	"	0.100		97.8	70-130			
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100		103	70-130			
Naphthalene	0.0839	0.0038	"	0.100		83.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0274		"	0.0400		68.4	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		93.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.6	50-150			

Matrix Spike (BGB0327-MS1)

Source: 2302219-01

Prepared: 02/10/23 Analyzed: 02/11/23

Benzene	0.0888	0.0020	mg/kg	0.100	0.00690	81.9	70-130			
Toluene	0.0709	0.0050	"	0.100	ND	70.9	70-130			
Ethylbenzene	0.273	0.0050	"	0.100	0.169	104	70-130			
m,p-Xylene	0.376	0.010	"	0.200	0.188	93.8	70-130			
o-Xylene	0.0872	0.0050	"	0.100	ND	87.2	70-130			
1,2,4-Trimethylbenzene	0.570	0.0050	"	0.100	0.521	48.4	70-130			QM-07
1,3,5-Trimethylbenzene	0.215	0.0050	"	0.100	0.163	51.6	70-130			QM-07
Naphthalene	0.227	0.0038	"	0.100	0.159	67.3	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0258		"	0.0400		64.5	50-150			
Surrogate: Toluene-d8	0.0366		"	0.0400		91.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.4	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0327 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0327-MSD1)	Source: 2302219-01			Prepared: 02/10/23 Analyzed: 02/11/23						
Benzene	0.0888	0.0020	mg/kg	0.100	0.00690	81.9	70-130	0.00	30	
Toluene	0.0705	0.0050	"	0.100	ND	70.5	70-130	0.552	30	
Ethylbenzene	0.282	0.0050	"	0.100	0.169	113	70-130	3.01	30	
m,p-Xylene	0.380	0.010	"	0.200	0.188	96.1	70-130	1.24	30	
o-Xylene	0.0845	0.0050	"	0.100	ND	84.5	70-130	3.11	30	
1,2,4-Trimethylbenzene	0.603	0.0050	"	0.100	0.521	82.2	70-130	5.77	30	
1,3,5-Trimethylbenzene	0.211	0.0050	"	0.100	0.163	47.2	70-130	2.04	30	QM-07
Naphthalene	0.265	0.0038	"	0.100	0.159	106	70-130	15.7	30	
Surrogate: 1,2-Dichloroethane-d4	0.0238		"	0.0400		59.6	50-150			
Surrogate: Toluene-d8	0.0365		"	0.0400		91.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		95.1	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0328 - EPA 3550A

Blank (BGB0328-BLK1)

Prepared & Analyzed: 02/10/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	18.5		"	12.5	148	30-150				

LCS (BGB0328-BS1)

Prepared & Analyzed: 02/10/23

C10-C28 (DRO)	513	50	mg/kg	500	103	70-130				
Surrogate: o-Terphenyl	15.8		"	12.5	126	30-150				

Matrix Spike (BGB0328-MS1)

Source: 2302219-01

Prepared & Analyzed: 02/10/23

C10-C28 (DRO)	781	50	mg/kg	500	278	101	70-130			
Surrogate: o-Terphenyl	16.0		"	12.5	128	30-150				

Matrix Spike Dup (BGB0328-MSD1)

Source: 2302219-01

Prepared & Analyzed: 02/10/23

C10-C28 (DRO)	758	50	mg/kg	500	278	95.9	70-130	3.01	20	
Surrogate: o-Terphenyl	18.5		"	12.5	148	30-150				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Reporting				Spike	Source	%REC			RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0341 - EPA 5030 Soil MS

Blank (BGB0341-BLK1)

Prepared & Analyzed: 02/13/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0286		"	0.0333		85.9	40-150			
Surrogate: Fluoranthene-d10	0.0403		"	0.0333		121	40-150			

LCS (BGB0341-BS1)

Prepared & Analyzed: 02/13/23

Acenaphthene	0.0347	0.00500	mg/kg	0.0333		104	31-137			
Anthracene	0.0362	0.00500	"	0.0333		109	30-120			
Benzo (a) anthracene	0.0352	0.00500	"	0.0333		106	30-120			
Benzo (a) pyrene	0.0345	0.00500	"	0.0333		103	30-120			
Benzo (b) fluoranthene	0.0338	0.00500	"	0.0333		101	30-120			
Benzo (k) fluoranthene	0.0345	0.00500	"	0.0333		103	30-120			
Chrysene	0.0347	0.00500	"	0.0333		104	30-120			
Dibenz (a,h) anthracene	0.0289	0.00500	"	0.0333		86.8	30-120			
Fluoranthene	0.0346	0.00500	"	0.0333		104	30-120			
Fluorene	0.0361	0.00500	"	0.0333		108	30-120			
Indeno (1,2,3-cd) pyrene	0.0321	0.00500	"	0.0333		96.4	30-120			
Pyrene	0.0304	0.00500	"	0.0333		91.3	35-142			
1-Methylnaphthalene	0.0333	0.00500	"	0.0333		99.9	35-142			
2-Methylnaphthalene	0.0380	0.00500	"	0.0333		114	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0292		"	0.0333		87.7	40-150			
Surrogate: Fluoranthene-d10	0.0373		"	0.0333		112	40-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0341 - EPA 5030 Soil MS

Matrix Spike (BGB0341-MS1)			Source: 2302219-01		Prepared & Analyzed: 02/13/23					
Acenaphthene	0.0271	0.00500	mg/kg	0.0333	ND	81.3	31-137			
Anthracene	0.0273	0.00500	"	0.0333	ND	81.8	30-120			
Benzo (a) anthracene	0.0211	0.00500	"	0.0333	ND	63.4	30-120			
Benzo (a) pyrene	0.0169	0.00500	"	0.0333	ND	50.6	30-120			
Benzo (b) fluoranthene	0.0186	0.00500	"	0.0333	ND	55.7	30-120			
Benzo (k) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.2	30-120			
Chrysene	0.0331	0.00500	"	0.0333	0.0120	63.4	30-120			
Dibenz (a,h) anthracene	0.0138	0.00500	"	0.0333	ND	41.3	30-120			
Fluoranthene	0.0226	0.00500	"	0.0333	ND	67.8	30-120			
Fluorene	0.0717	0.00500	"	0.0333	0.0503	64.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0158	0.00500	"	0.0333	ND	47.5	30-120			
Pyrene	0.0183	0.00500	"	0.0333	ND	54.9	35-142			
1-Methylnaphthalene	0.493	0.00500	"	0.0333	0.432	183	15-130			QM-01
2-Methylnaphthalene	0.721	0.00500	"	0.0333	0.614	322	15-130			QM-01
Surrogate: 2-Methylnaphthalene-d10	0.0212		"	0.0333		63.7	40-150			
Surrogate: Fluoranthene-d10	0.0199		"	0.0333		59.8	40-150			

Matrix Spike Dup (BGB0341-MSD1)			Source: 2302219-01		Prepared & Analyzed: 02/13/23					
Acenaphthene	0.0296	0.00500	mg/kg	0.0333	ND	88.8	31-137	8.87	30	
Anthracene	0.0256	0.00500	"	0.0333	ND	76.8	30-120	6.37	30	
Benzo (a) anthracene	0.0169	0.00500	"	0.0333	ND	50.7	30-120	22.2	30	
Benzo (a) pyrene	0.0179	0.00500	"	0.0333	ND	53.8	30-120	6.24	30	
Benzo (b) fluoranthene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	6.07	30	
Benzo (k) fluoranthene	0.0166	0.00500	"	0.0333	ND	49.8	30-120	1.23	30	
Chrysene	0.0307	0.00500	"	0.0333	0.0120	56.0	30-120	7.68	30	
Dibenz (a,h) anthracene	0.0139	0.00500	"	0.0333	ND	41.6	30-120	0.789	30	
Fluoranthene	0.0265	0.00500	"	0.0333	ND	79.4	30-120	15.8	30	
Fluorene	0.0784	0.00500	"	0.0333	0.0503	84.3	30-120	8.93	30	
Indeno (1,2,3-cd) pyrene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	2.13	30	
Pyrene	0.0216	0.00500	"	0.0333	ND	64.9	35-142	16.8	30	
1-Methylnaphthalene	0.577	0.00500	"	0.0333	0.432	436	15-130	15.8	50	QM-01
2-Methylnaphthalene	0.797	0.00500	"	0.0333	0.614	549	15-130	9.98	50	QM-01
Surrogate: 2-Methylnaphthalene-d10	0.0223		"	0.0333		66.9	40-150			
Surrogate: Fluoranthene-d10	0.0226		"	0.0333		67.9	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0330 - EPA 3050B

Blank (BGB0330-BLK1)

Prepared: 02/10/23 Analyzed: 02/13/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGB0330-BS1)

Prepared: 02/10/23 Analyzed: 02/13/23

Arsenic	47.1	0.200	mg/kg wet	40.0	118	80-120
Barium	44.0	0.400	"	40.0	110	80-120
Selenium	4.11	0.260	"	4.00	103	80-120

Duplicate (BGB0330-DUP1)

Source: 2302230-01

Prepared: 02/10/23 Analyzed: 02/13/23

Arsenic	1.98	0.200	mg/kg dry	2.08	5.18	20
Barium	75.2	0.400	"	63.1	17.5	20
Selenium	0.766	0.260	"	0.740	3.35	20

Matrix Spike (BGB0330-MS1)

Source: 2302230-01

Prepared: 02/10/23 Analyzed: 02/13/23

Arsenic	54.4	0.200	mg/kg dry	46.5	2.08	113	75-125	QM-05
Barium	196	0.400	"	46.5	63.1	286	75-125	
Selenium	5.21	0.260	"	4.65	0.740	96.3	75-125	

Matrix Spike Dup (BGB0330-MSD1)

Source: 2302230-01

Prepared: 02/10/23 Analyzed: 02/13/23

Arsenic	53.1	0.200	mg/kg dry	46.5	2.08	110	75-125	2.30	25	QM-05
Barium	192	0.400	"	46.5	63.1	278	75-125	2.07	25	
Selenium	5.26	0.260	"	4.65	0.740	97.3	75-125	0.885	25	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0335 - General Preparation

Duplicate (BGB0335-DUP1)

Source: 2302219-01

Prepared & Analyzed: 02/12/23

% Solids	80.7	%	80.9	0.256	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0359 - General Preparation

LCS (BGB0359-BS1)

Prepared & Analyzed: 02/13/23

pH	9.06	pH Units	9.18	98.7	95-105
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Duplicate (BGB0359-DUP1)

Source: 2301294-03

Prepared & Analyzed: 02/13/23

pH	8.44	pH Units	8.41	0.356	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/15/23 13:59

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 17, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2302282

Enclosed are the results of analyses for samples received by Summit Scientific on 02/14/23 17:43. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

ANALYTICAL REPORT FOR SAMPLES




Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS164@8'	2302282-01	Soil	02/14/23 07:46	02/14/23 17:43
SS165@10'	2302282-02	Soil	02/14/23 07:51	02/14/23 17:43
SS166@12'	2302282-03	Soil	02/14/23 08:20	02/14/23 17:43
SS167@12'	2302282-04	Soil	02/14/23 10:24	02/14/23 17:43
SS168@12'	2302282-05	Soil	02/14/23 11:10	02/14/23 17:43
SS169@8'	2302282-06	Soil	02/14/23 12:31	02/14/23 17:43
SS170@10'	2302282-07	Soil	02/14/23 12:35	02/14/23 17:43
SS171@8'	2302282-08	Soil	02/14/23 12:55	02/14/23 17:43
SS172@10'	2302282-09	Soil	02/14/23 13:01	02/14/23 17:43
SS173@12'	2302282-10	Soil	02/14/23 13:23	02/14/23 17:43

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Warning 3,4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested								Special Instructions	
					HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAHs	Metals		
1	SS164C8'	2/14/23	746	3			X			X			X	X	X		X	X	X		
2	SS165C10'		751																		
3	SS166C12'		820																		
4	SS167C12'		1024																		
5	SS168C12'		1110																		
6	SS169C8'		1231																		
7	SS170C10'		1235																		
8	SS171C8'		1255																		
9	SS172C10'		1301																		
10	SS173C12'	↓	1323	↓			↓			↓			↓	↓	↓		↓	↓	↓		
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 2/14/23 1452	Received by: Tasman Lockbox	Date/Time: 2/14/23 1452	TAT Business Days	Field DO	Notes: * = pH only * = PAH's = Chrysene, Pyrene, Fluorene, 1-m, 2-m. * = metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman Lockbox	Date/Time: 2/14/23 1743	Received by: 	Date/Time: 2/14/23 1743	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 8.3	Corrected Temperature: 	IR gun #: _____	HNO3 lot #: _____			

S₂

Sample Receipt Checklist

S2 Work Order# 2302282Client: PactasmanClient Project ID: Warning 3/4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐Airbill #:
☐ ☐ ☐ ☐ ☐

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

8.3

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ice</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Date/Time

2-14-23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS164@8'
2302282-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 07:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0436	02/14/23	02/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 07:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 07:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0437	02/14/23	02/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 07:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		118 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS164@8'
2302282-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 07:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0445	02/15/23	02/15/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/14/23 07:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		70.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		82.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/14/23 07:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.736	0.200		mg/kg dry	1	BGB0441	02/14/23	02/16/23	EPA 6020B	
Barium	13.0	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 07:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	90.4			%	1	BGB0470	02/15/23	02/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/14/23 07:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS164@8'
2302282-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.01	pH Units	1	BGB0473	02/15/23	02/15/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS165@10'
2302282-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 07:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0436	02/14/23	02/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.52	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 07:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 07:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0437	02/14/23	02/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 07:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		116 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS165@10'
2302282-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 07:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0445	02/15/23	02/15/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/14/23 07:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		83.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/14/23 07:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGB0441	02/14/23	02/16/23	EPA 6020B	
Barium	4.17	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 07:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.9			%	1	BGB0470	02/15/23	02/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/14/23 07:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS165@10'
2302282-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.46	pH Units	1	BGB0473	02/15/23	02/15/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS166@12'
2302282-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 08:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0436	02/14/23	02/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 08:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 08:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0437	02/14/23	02/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 08:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		119 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS166@12'
2302282-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 08:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0445	02/15/23	02/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/14/23 08:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		131 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		78.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/14/23 08:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.261	0.200		mg/kg dry	1	BGB0441	02/14/23	02/16/23	EPA 6020B	
Barium	5.43	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 08:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.0			%	1	BGB0470	02/15/23	02/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/14/23 08:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/17/23 11:13

SS166@12'
2302282-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.32	pH Units	1	BGB0473	02/15/23	02/15/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS167@12'
2302282-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0436	02/14/23	02/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0437	02/14/23	02/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		119 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS167@12'
2302282-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0445	02/15/23	02/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/14/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		77.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		78.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/14/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.274	0.200		mg/kg dry	1	BGB0441	02/14/23	02/16/23	EPA 6020B	
Barium	4.45	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1			%	1	BGB0470	02/15/23	02/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/14/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/17/23 11:13

SS167@12'
2302282-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.41	pH Units	1	BGB0473	02/15/23	02/15/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS168@12'
2302282-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0436	02/14/23	02/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		107 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0437	02/14/23	02/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		94.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS168@12'
2302282-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0445	02/15/23	02/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		86.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/14/23 11:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.259	0.200		mg/kg dry	1	BGB0441	02/14/23	02/16/23	EPA 6020B	
Barium	2.80	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.1			%	1	BGB0470	02/15/23	02/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/14/23 11:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS168@12'
2302282-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.15	pH Units	1	BGB0473	02/15/23	02/15/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS169@8'
2302282-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0436	02/14/23	02/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		115 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0437	02/14/23	02/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		96.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS169@8'
2302282-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0445	02/15/23	02/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		83.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		82.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/14/23 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.296	0.200		mg/kg dry	1	BGB0441	02/14/23	02/16/23	EPA 6020B	
Barium	9.80	0.400		"	"	"	"	"	"	
Selenium	0.294	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.1			%	1	BGB0470	02/15/23	02/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/14/23 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS169@8'
2302282-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.10	pH Units	1	BGB0473	02/15/23	02/15/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS170@10'
2302282-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0436	02/14/23	02/15/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		107 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0437	02/14/23	02/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		112 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS170@10'
2302282-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0445	02/15/23	02/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		99.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		79.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/14/23 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.378	0.200		mg/kg dry	1	BGB0441	02/14/23	02/16/23	EPA 6020B	
Barium	29.3	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.3			%	1	BGB0470	02/15/23	02/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/14/23 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/17/23 11:13

SS170@10'
2302282-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.29	pH Units	1	BGB0473	02/15/23	02/15/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS171@8'
2302282-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0436	02/14/23	02/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		115 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.9 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0437	02/14/23	02/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		109 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS171@8'
2302282-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0445	02/15/23	02/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		99.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		82.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/14/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.323	0.200		mg/kg dry	1	BGB0441	02/14/23	02/16/23	EPA 6020B	
Barium	5.22	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	86.9			%	1	BGB0470	02/15/23	02/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/14/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/17/23 11:13

SS171@8'
2302282-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.03	pH Units	1	BGB0473	02/15/23	02/15/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS172@10'
2302282-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0436	02/14/23	02/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0437	02/14/23	02/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 13:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		90.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS172@10'
2302282-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 13:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0445	02/15/23	02/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/14/23 13:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		85.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		71.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/14/23 13:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.320	0.200		mg/kg dry	1	BGB0441	02/14/23	02/16/23	EPA 6020B	
Barium	7.80	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 13:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.4			%	1	BGB0470	02/15/23	02/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/14/23 13:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/17/23 11:13

SS172@10'
2302282-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.67	pH Units	1	BGB0473	02/15/23	02/15/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS173@12'
2302282-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 13:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0436	02/14/23	02/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 13:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		126 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 13:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0437	02/14/23	02/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 13:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		85.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

SS173@12'
2302282-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 13:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0445	02/15/23	02/16/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/14/23 13:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		111 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		88.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/14/23 13:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.327	0.200		mg/kg dry	1	BGB0441	02/14/23	02/16/23	EPA 6020B	
Barium	2.71	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 13:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1			%	1	BGB0470	02/15/23	02/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/14/23 13:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/17/23 11:13

SS173@12'
2302282-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.27	pH Units	1	BGB0473	02/15/23	02/15/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0436 - EPA 5030 Soil MS

Blank (BGB0436-BLK1)

Prepared: 02/14/23 Analyzed: 02/15/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0496		"	0.0400		124	50-150			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150			

LCS (BGB0436-BS1)

Prepared: 02/14/23 Analyzed: 02/15/23

Benzene	0.113	0.0020	mg/kg	0.100		113	70-130			
Toluene	0.111	0.0050	"	0.100		111	70-130			
Ethylbenzene	0.114	0.0050	"	0.100		114	70-130			
m,p-Xylene	0.221	0.010	"	0.200		110	70-130			
o-Xylene	0.109	0.0050	"	0.100		109	70-130			
1,2,4-Trimethylbenzene	0.108	0.0050	"	0.100		108	70-130			
1,3,5-Trimethylbenzene	0.109	0.0050	"	0.100		109	70-130			
Naphthalene	0.0890	0.0038	"	0.100		89.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0431		"	0.0400		108	50-150			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.0	50-150			

Matrix Spike (BGB0436-MS1)

Source: 2302282-01

Prepared: 02/14/23 Analyzed: 02/15/23

Benzene	0.106	0.0020	mg/kg	0.100	ND	106	70-130			
Toluene	0.106	0.0050	"	0.100	ND	106	70-130			
Ethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130			
m,p-Xylene	0.210	0.010	"	0.200	ND	105	70-130			
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130			
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130			
1,3,5-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
Naphthalene	0.0815	0.0038	"	0.100	ND	81.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0401		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0436 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0436-MSD1)	Source: 2302282-01			Prepared: 02/14/23 Analyzed: 02/15/23						
Benzene	0.107	0.0020	mg/kg	0.100	ND	107	70-130	0.984	30	
Toluene	0.108	0.0050	"	0.100	ND	108	70-130	1.94	30	
Ethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130	1.61	30	
m,p-Xylene	0.217	0.010	"	0.200	ND	109	70-130	3.19	30	
o-Xylene	0.104	0.0050	"	0.100	ND	104	70-130	2.83	30	
1,2,4-Trimethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130	2.84	30	
1,3,5-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	1.96	30	
Naphthalene	0.0823	0.0038	"	0.100	ND	82.3	70-130	0.952	30	
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		98.9	50-150			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0400		94.7	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0437 - EPA 3550A

Blank (BGB0437-BLK1)

Prepared: 02/14/23 Analyzed: 02/15/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	15.4		"	12.5		123	30-150			

Blank (BGB0437-BLK2)

Prepared: 02/14/23 Analyzed: 02/15/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	16.4		"	12.5		131	30-150			

LCS (BGB0437-BS1)

Prepared: 02/14/23 Analyzed: 02/15/23

C10-C28 (DRO)	399	50	mg/kg	500		79.7	70-130			
Surrogate: o-Terphenyl	15.8		"	12.5		127	30-150			

LCS (BGB0437-BS2)

Prepared: 02/14/23 Analyzed: 02/15/23

C10-C28 (DRO)	414	50	mg/kg	500		82.7	70-130			
Surrogate: o-Terphenyl	16.1		"	12.5		129	30-150			

Matrix Spike (BGB0437-MS1)

Source: 2302282-01

Prepared: 02/14/23 Analyzed: 02/15/23

C10-C28 (DRO)	494	50	mg/kg	500	23.5	94.2	70-130			
Surrogate: o-Terphenyl	14.7		"	12.5		118	30-150			

Matrix Spike (BGB0437-MS2)

Source: 2302285-01

Prepared: 02/14/23 Analyzed: 02/15/23

C10-C28 (DRO)	447	50	mg/kg	500	11.7	87.1	70-130			
Surrogate: o-Terphenyl	13.3		"	12.5		107	30-150			

Matrix Spike Dup (BGB0437-MSD1)

Source: 2302282-01

Prepared: 02/14/23 Analyzed: 02/15/23

C10-C28 (DRO)	523	50	mg/kg	500	23.5	99.8	70-130	5.58	20	
Surrogate: o-Terphenyl	15.2		"	12.5		122	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0437 - EPA 3550A

Matrix Spike Dup (BGB0437-MSD2)

Source: 2302285-01

Prepared: 02/14/23 Analyzed: 02/15/23

C10-C28 (DRO)	402	50	mg/kg	500	11.7	78.1	70-130	10.6	20	
Surrogate: o-Terphenyl	14.5		"	12.5		116	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result		%REC	Limits	RPD	Notes

Batch BGB0445 - EPA 5030 Soil MS

Blank (BGB0445-BLK1)

Prepared & Analyzed: 02/15/23

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0386	"	0.0333	116	40-150
Surrogate: Fluoranthene-d10	0.0320	"	0.0333	95.9	40-150

LCS (BGB0445-BS1)

Prepared & Analyzed: 02/15/23

Acenaphthene	0.0332	0.00500	mg/kg	0.0333	99.6	31-137
Anthracene	0.0336	0.00500	"	0.0333	101	30-120
Benzo (a) anthracene	0.0396	0.00500	"	0.0333	119	30-120
Benzo (a) pyrene	0.0392	0.00500	"	0.0333	118	30-120
Benzo (b) fluoranthene	0.0399	0.00500	"	0.0333	120	30-120
Benzo (k) fluoranthene	0.0399	0.00500	"	0.0333	120	30-120
Chrysene	0.0374	0.00500	"	0.0333	112	30-120
Dibenz (a,h) anthracene	0.0352	0.00500	"	0.0333	106	30-120
Fluoranthene	0.0332	0.00500	"	0.0333	99.7	30-120
Fluorene	0.0332	0.00500	"	0.0333	99.6	30-120
Indeno (1,2,3-cd) pyrene	0.0376	0.00500	"	0.0333	113	30-120
Pyrene	0.0448	0.00500	"	0.0333	134	35-142
1-Methylnaphthalene	0.0338	0.00500	"	0.0333	101	35-142
2-Methylnaphthalene	0.0305	0.00500	"	0.0333	91.6	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0325	"	0.0333	97.5	40-150
Surrogate: Fluoranthene-d10	0.0327	"	0.0333	98.2	40-150

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0445 - EPA 5030 Soil MS

Matrix Spike (BGB0445-MS1)			Source: 2302269-01		Prepared & Analyzed: 02/15/23						
Acenaphthene	0.0399	0.00500	mg/kg	0.0333	0.0198	60.5	31-137				
Anthracene	0.0236	0.00500	"	0.0333	ND	70.7	30-120				
Benzo (a) anthracene	0.0355	0.00500	"	0.0333	0.00364	95.7	30-120				
Benzo (a) pyrene	0.0279	0.00500	"	0.0333	ND	83.8	30-120				
Benzo (b) fluoranthene	0.0311	0.00500	"	0.0333	0.00304	84.0	30-120				
Benzo (k) fluoranthene	0.0276	0.00500	"	0.0333	0.00217	76.3	30-120				
Chrysene	0.0470	0.00500	"	0.0333	0.00871	115	30-120				
Dibenz (a,h) anthracene	0.0215	0.00500	"	0.0333	ND	64.6	30-120				
Fluoranthene	0.0285	0.00500	"	0.0333	0.00307	76.3	30-120				
Fluorene	0.0694	0.00500	"	0.0333	0.0536	47.2	30-120				
Indeno (1,2,3-cd) pyrene	0.0257	0.00500	"	0.0333	ND	77.2	30-120				
Pyrene	0.0343	0.00500	"	0.0333	0.00719	81.5	35-142				
1-Methylnaphthalene	0.167	0.00500	"	0.0333	0.415	NR	15-130				QM-02
2-Methylnaphthalene	0.291	0.00500	"	0.0333	0.722	NR	15-130				QM-02
Surrogate: 2-Methylnaphthalene-d10	0.0255		"	0.0333		76.5	40-150				
Surrogate: Fluoranthene-d10	0.0225		"	0.0333		67.5	40-150				

Matrix Spike Dup (BGB0445-MSD1)			Source: 2302269-01		Prepared & Analyzed: 02/15/23						
Acenaphthene	0.0379	0.00500	mg/kg	0.0333	0.0198	54.4	31-137	5.23	30		
Anthracene	0.0212	0.00500	"	0.0333	ND	63.6	30-120	10.5	30		
Benzo (a) anthracene	0.0355	0.00500	"	0.0333	0.00364	95.5	30-120	0.173	30		
Benzo (a) pyrene	0.0265	0.00500	"	0.0333	ND	79.5	30-120	5.20	30		
Benzo (b) fluoranthene	0.0297	0.00500	"	0.0333	0.00304	80.1	30-120	4.37	30		
Benzo (k) fluoranthene	0.0256	0.00500	"	0.0333	0.00217	70.2	30-120	7.56	30		
Chrysene	0.0447	0.00500	"	0.0333	0.00871	108	30-120	5.14	30		
Dibenz (a,h) anthracene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	4.05	30		
Fluoranthene	0.0252	0.00500	"	0.0333	0.00307	66.2	30-120	12.5	30		
Fluorene	0.0655	0.00500	"	0.0333	0.0536	35.6	30-120	5.74	30		
Indeno (1,2,3-cd) pyrene	0.0258	0.00500	"	0.0333	ND	77.3	30-120	0.172	30		
Pyrene	0.0329	0.00500	"	0.0333	0.00719	77.0	35-142	4.40	30		
1-Methylnaphthalene	0.375	0.00500	"	0.0333	0.415	NR	15-130	76.7	50		QM-02
2-Methylnaphthalene	0.681	0.00500	"	0.0333	0.722	NR	15-130	80.2	50		QM-02
Surrogate: 2-Methylnaphthalene-d10	0.0264		"	0.0333		79.1	40-150				
Surrogate: Fluoranthene-d10	0.0202		"	0.0333		60.5	40-150				

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0441 - EPA 3050B

Blank (BGB0441-BLK1)

Prepared: 02/14/23 Analyzed: 02/16/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGB0441-BS1)

Prepared: 02/14/23 Analyzed: 02/16/23

Arsenic	40.4	0.200	mg/kg wet	40.0	101	80-120
Barium	43.3	0.400	"	40.0	108	80-120
Selenium	3.87	0.260	"	4.00	96.7	80-120

Duplicate (BGB0441-DUP1)

Source: 2302282-01

Prepared: 02/14/23 Analyzed: 02/16/23

Arsenic	0.716	0.200	mg/kg dry	0.736	2.80	20
Barium	13.1	0.400	"	13.0	0.750	20
Selenium	ND	0.260	"	ND		20

Matrix Spike (BGB0441-MS1)

Source: 2302282-01

Prepared: 02/14/23 Analyzed: 02/16/23

Arsenic	43.8	0.200	mg/kg dry	44.3	0.736	97.2	75-125
Barium	57.3	0.400	"	44.3	13.0	100	75-125
Selenium	4.39	0.260	"	4.43	ND	99.1	75-125

Matrix Spike Dup (BGB0441-MSD1)

Source: 2302282-01

Prepared: 02/14/23 Analyzed: 02/16/23

Arsenic	43.0	0.200	mg/kg dry	44.3	0.736	95.4	75-125	1.82	25
Barium	50.7	0.400	"	44.3	13.0	85.2	75-125	12.2	25
Selenium	4.28	0.260	"	4.43	ND	96.8	75-125	2.35	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0470 - General Preparation

Duplicate (BGB0470-DUP1)		Source: 2302282-01		Prepared: 02/15/23 Analyzed: 02/16/23	
% Solids	90.5		%	90.4	0.0996 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/17/23 11:13

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0473 - General Preparation

LCS (BGB0473-BS1)

Prepared & Analyzed: 02/15/23

pH	9.17	pH Units	9.18	99.9	95-105
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Duplicate (BGB0473-DUP1)

Source: 2302282-01

Prepared & Analyzed: 02/15/23

pH	7.90	pH Units	8.01	1.38	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/17/23 11:13

Notes and Definitions

QM-02	The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 22, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2302359

Enclosed are the results of analyses for samples received by Summit Scientific on 02/17/23 17:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS174@8'	2302359-01	Soil	02/17/23 10:24	02/17/23 17:50
SS175@10'	2302359-02	Soil	02/17/23 10:29	02/17/23 17:50
SS176@12'	2302359-03	Soil	02/17/23 12:43	02/17/23 17:50

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Werning 3.4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested							Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ✕	PAHs ✕	Metals ✕		
1	SS174e8'	2/17/23	1024	3			X			X			X	X	X		X	X	X		
2	SS175e10'	↓	1029	↓			↓			↓			↓	↓	↓		↓	↓	↓		
3	SS176e12'	↓	1243	↓			↓			↓			↓	↓	↓		↓	↓	↓		
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <i>S. Anderson</i>	Date/Time: 2/17/23 1410	Received by: <i>Tasman Lockbox</i>	Date/Time: 2/17/23 1410	TAT Business Days	Field DO	Notes: * = pH only * = chrysene, Pyrene, Fluorene, 1-m, 2-m. * = metals = Arsenic, Barium, Selenium.
Relinquished by: <i>Tasman Lockbox</i>	Date/Time: 2/17/23 1750	Received by: <i>[Signature]</i>	Date/Time: 2/17/23 1750	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day <input type="checkbox"/>	Field ORP	
				2 Days <input type="checkbox"/>	Field pH	
				3 Days <input type="checkbox"/>	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard <input type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: 8.1	Corrected Temperature: <i>[Signature]</i>	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2302359Client: Poc / Casman Client Project ID: Warning 34-2 Tank BottledShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.1Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

 Custodian Printed Name

2-17-23
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

SS174@8'
2302359-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/17/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0554	02/17/23	02/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.1 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/17/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0555	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 10:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		77.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

SS174@8'
2302359-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0559	02/19/23	02/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		44.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		81.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/17/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.581	0.200		mg/kg dry	1	BGB0563	02/19/23	02/20/23	EPA 6020B	
Barium	13.3	0.400		"	"	"	"	"	"	
Selenium	0.216	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/17/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.7			%	1	BGB0587	02/20/23	02/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/17/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/22/23 10:56

SS174@8'
2302359-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	6.49	pH Units	1	BGB0565	02/19/23	02/19/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

SS175@10'
2302359-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/17/23 10:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0554	02/17/23	02/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 10:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		82.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		92.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/17/23 10:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0555	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 10:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		86.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

SS175@10'
2302359-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 10:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0559	02/19/23	02/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 10:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		46.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/17/23 10:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.703	0.200		mg/kg dry	1	BGB0563	02/19/23	02/20/23	EPA 6020B	
Barium	10.6	0.400		"	"	"	"	"	"	
Selenium	0.429	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/17/23 10:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.7			%	1	BGB0587	02/20/23	02/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/17/23 10:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

SS175@10'
2302359-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.55	pH Units	1	BGB0565	02/19/23	02/19/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

SS176@12'
2302359-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/17/23 12:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0554	02/17/23	02/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		93.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.1 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/17/23 12:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0555	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		97.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

SS176@12'
2302359-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 12:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0559	02/19/23	02/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		66.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		88.8 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/17/23 12:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGB0563	02/19/23	02/20/23	EPA 6020B	
Barium	5.97	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/17/23 12:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	86.7			%	1	BGB0587	02/20/23	02/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/17/23 12:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/22/23 10:56

SS176@12'
2302359-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.58	pH Units	1	BGB0565	02/19/23	02/19/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0554 - EPA 5030 Soil MS

Blank (BGB0554-BLK1)

Prepared: 02/17/23 Analyzed: 02/18/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0339		"	0.0400		84.8	50-150			
Surrogate: Toluene-d8	0.0368		"	0.0400		92.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0400		95.2	50-150			

Blank (BGB0554-BLK2)

Prepared: 02/17/23 Analyzed: 02/18/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0352		"	0.0400		88.0	50-150			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	50-150			

LCS (BGB0554-BS1)

Prepared: 02/17/23 Analyzed: 02/18/23

Benzene	0.0954	0.0020	mg/kg	0.100		95.4	70-130			
Toluene	0.0863	0.0050	"	0.100		86.3	70-130			
Ethylbenzene	0.106	0.0050	"	0.100		106	70-130			
m,p-Xylene	0.209	0.010	"	0.200		104	70-130			
o-Xylene	0.0982	0.0050	"	0.100		98.2	70-130			
1,2,4-Trimethylbenzene	0.0985	0.0050	"	0.100		98.5	70-130			
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100		104	70-130			
Naphthalene	0.0940	0.0038	"	0.100		94.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0312		"	0.0400		78.0	50-150			
Surrogate: Toluene-d8	0.0374		"	0.0400		93.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.4	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0554 - EPA 5030 Soil MS

LCS (BGB0554-BS2)

Prepared: 02/17/23 Analyzed: 02/18/23

Benzene	0.0957	0.0020	mg/kg	0.100		95.7	70-130
Toluene	0.0846	0.0050	"	0.100		84.6	70-130
Ethylbenzene	0.108	0.0050	"	0.100		108	70-130
m,p-Xylene	0.211	0.010	"	0.200		106	70-130
o-Xylene	0.0999	0.0050	"	0.100		99.9	70-130
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100		104	70-130
Naphthalene	0.0993	0.0038	"	0.100		99.3	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0316		"	0.0400		79.1	50-150
Surrogate: Toluene-d8	0.0368		"	0.0400		91.9	50-150
Surrogate: 4-Bromofluorobenzene	0.0362		"	0.0400		90.4	50-150

Matrix Spike (BGB0554-MS1)

Source: 2302355-01

Prepared: 02/17/23 Analyzed: 02/18/23

Benzene	0.0946	0.0020	mg/kg	0.100	ND	94.6	70-130
Toluene	0.0869	0.0050	"	0.100	ND	86.9	70-130
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130
o-Xylene	0.0980	0.0050	"	0.100	ND	98.0	70-130
1,2,4-Trimethylbenzene	0.0999	0.0050	"	0.100	ND	99.9	70-130
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130
Naphthalene	0.0746	0.0038	"	0.100	ND	74.6	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0346		"	0.0400		86.5	50-150
Surrogate: Toluene-d8	0.0364		"	0.0400		91.1	50-150
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	50-150

Matrix Spike (BGB0554-MS2)

Source: 2302355-02

Prepared: 02/17/23 Analyzed: 02/18/23

Benzene	0.0952	0.0020	mg/kg	0.100	ND	95.2	70-130
Toluene	0.0869	0.0050	"	0.100	ND	86.9	70-130
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130
m,p-Xylene	0.211	0.010	"	0.200	ND	105	70-130
o-Xylene	0.0976	0.0050	"	0.100	ND	97.6	70-130
1,2,4-Trimethylbenzene	0.0994	0.0050	"	0.100	ND	99.4	70-130
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130
Naphthalene	0.0739	0.0038	"	0.100	ND	73.9	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0341		"	0.0400		85.4	50-150
Surrogate: Toluene-d8	0.0356		"	0.0400		89.0	50-150
Surrogate: 4-Bromofluorobenzene	0.0365		"	0.0400		91.4	50-150

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0554 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0554-MSD1)

Source: 2302355-01

Prepared: 02/17/23 Analyzed: 02/18/23

Benzene	0.0984	0.0020	mg/kg	0.100	ND	98.4	70-130	3.92	30	
Toluene	0.0901	0.0050	"	0.100	ND	90.1	70-130	3.63	30	
Ethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	2.75	30	
m,p-Xylene	0.215	0.010	"	0.200	ND	108	70-130	3.56	30	
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130	2.36	30	
1,2,4-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	2.52	30	
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	3.68	30	
Naphthalene	0.0985	0.0038	"	0.100	ND	98.5	70-130	27.6	30	
Surrogate: 1,2-Dichloroethane-d4	0.0333		"	0.0400		83.3	50-150			
Surrogate: Toluene-d8	0.0366		"	0.0400		91.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0365		"	0.0400		91.2	50-150			

Matrix Spike Dup (BGB0554-MSD2)

Source: 2302355-02

Prepared: 02/17/23 Analyzed: 02/18/23

Benzene	0.0945	0.0020	mg/kg	0.100	ND	94.5	70-130	0.664	30	
Toluene	0.0857	0.0050	"	0.100	ND	85.7	70-130	1.39	30	
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	0.285	30	
m,p-Xylene	0.209	0.010	"	0.200	ND	104	70-130	0.843	30	
o-Xylene	0.0978	0.0050	"	0.100	ND	97.8	70-130	0.184	30	
1,2,4-Trimethylbenzene	0.0991	0.0050	"	0.100	ND	99.1	70-130	0.242	30	
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	1.66	30	
Naphthalene	0.0710	0.0038	"	0.100	ND	71.0	70-130	4.06	30	
Surrogate: 1,2-Dichloroethane-d4	0.0342		"	0.0400		85.4	50-150			
Surrogate: Toluene-d8	0.0371		"	0.0400		92.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.5	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0555 - EPA 3550A

Blank (BGB0555-BLK1)

Prepared & Analyzed: 02/17/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.2		"	12.5		97.8	30-150			

Blank (BGB0555-BLK2)

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.2		"	12.5		89.9	30-150			

LCS (BGB0555-BS1)

Prepared & Analyzed: 02/17/23

C10-C28 (DRO)	524	50	mg/kg	500		105	70-130			
Surrogate: o-Terphenyl	11.5		"	12.5		91.7	30-150			

LCS (BGB0555-BS2)

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	554	50	mg/kg	500		111	70-130			
Surrogate: o-Terphenyl	13.0		"	12.5		104	30-150			

Matrix Spike (BGB0555-MS1)

Source: 2302355-01

Prepared & Analyzed: 02/17/23

C10-C28 (DRO)	449	50	mg/kg	500	11.5	87.4	70-130			
Surrogate: o-Terphenyl	9.56		"	12.5		76.4	30-150			

Matrix Spike (BGB0555-MS2)

Source: 2302355-02

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	432	50	mg/kg	500	11.7	84.0	70-130			
Surrogate: o-Terphenyl	9.82		"	12.5		78.5	30-150			

Matrix Spike Dup (BGB0555-MSD1)

Source: 2302355-01

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	448	50	mg/kg	500	11.5	87.3	70-130	0.0604	20	
Surrogate: o-Terphenyl	9.69		"	12.5		77.5	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0555 - EPA 3550A

Matrix Spike Dup (BGB0555-MSD2)

Source: 2302355-02

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	474	50	mg/kg	500	11.7	92.5	70-130	9.39	20	
Surrogate: o-Terphenyl	12.0		"	12.5		95.7	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0559 - EPA 5030 Soil MS

Blank (BGB0559-BLK1)

Prepared & Analyzed: 02/19/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0181		"	0.0333		54.4		40-150			
Surrogate: Fluoranthene-d10	0.0349		"	0.0333		105		40-150			

LCS (BGB0559-BS1)

Prepared & Analyzed: 02/19/23

Acenaphthene	0.0333	0.00500	mg/kg	0.0333		100		31-137			
Anthracene	0.0341	0.00500	"	0.0333		102		30-120			
Benzo (a) anthracene	0.0392	0.00500	"	0.0333		118		30-120			
Benzo (a) pyrene	0.0361	0.00500	"	0.0333		108		30-120			
Benzo (b) fluoranthene	0.0388	0.00500	"	0.0333		117		30-120			
Benzo (k) fluoranthene	0.0355	0.00500	"	0.0333		107		30-120			
Chrysene	0.0298	0.00500	"	0.0333		89.5		30-120			
Dibenz (a,h) anthracene	0.0275	0.00500	"	0.0333		82.5		30-120			
Fluoranthene	0.0336	0.00500	"	0.0333		101		30-120			
Fluorene	0.0347	0.00500	"	0.0333		104		30-120			
Indeno (1,2,3-cd) pyrene	0.0298	0.00500	"	0.0333		89.3		30-120			
Pyrene	0.0336	0.00500	"	0.0333		101		35-142			
1-Methylnaphthalene	0.0314	0.00500	"	0.0333		94.3		35-142			
2-Methylnaphthalene	0.0191	0.00500	"	0.0333		57.4		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0326		"	0.0333		97.8		40-150			
Surrogate: Fluoranthene-d10	0.0343		"	0.0333		103		40-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0559 - EPA 5030 Soil MS

Matrix Spike (BGB0559-MS1)

Source: 2302355-01

Prepared & Analyzed: 02/19/23

Acenaphthene	0.0237	0.00500	mg/kg	0.0333	ND	71.1	31-137				
Anthracene	0.0230	0.00500	"	0.0333	ND	69.0	30-120				
Benzo (a) anthracene	0.0305	0.00500	"	0.0333	ND	91.5	30-120				
Benzo (a) pyrene	0.0261	0.00500	"	0.0333	ND	78.4	30-120				
Benzo (b) fluoranthene	0.0273	0.00500	"	0.0333	ND	81.8	30-120				
Benzo (k) fluoranthene	0.0256	0.00500	"	0.0333	ND	76.8	30-120				
Chrysene	0.0360	0.00500	"	0.0333	ND	108	30-120				
Dibenz (a,h) anthracene	0.0233	0.00500	"	0.0333	ND	69.8	30-120				
Fluoranthene	0.0241	0.00500	"	0.0333	ND	72.4	30-120				
Fluorene	0.0247	0.00500	"	0.0333	ND	74.2	30-120				
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333	ND	79.7	30-120				
Pyrene	0.0379	0.00500	"	0.0333	ND	114	35-142				
1-Methylnaphthalene	0.0254	0.00500	"	0.0333	ND	76.1	15-130				
2-Methylnaphthalene	0.0170	0.00500	"	0.0333	ND	51.0	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0253		"	0.0333		76.0	40-150				
Surrogate: Fluoranthene-d10	0.0245		"	0.0333		73.5	40-150				

Matrix Spike Dup (BGB0559-MSD1)

Source: 2302355-01

Prepared & Analyzed: 02/19/23

Acenaphthene	0.0218	0.00500	mg/kg	0.0333	ND	65.4	31-137	8.44	30		
Anthracene	0.0202	0.00500	"	0.0333	ND	60.6	30-120	13.0	30		
Benzo (a) anthracene	0.0269	0.00500	"	0.0333	ND	80.6	30-120	12.6	30		
Benzo (a) pyrene	0.0216	0.00500	"	0.0333	ND	64.8	30-120	19.0	30		
Benzo (b) fluoranthene	0.0235	0.00500	"	0.0333	ND	70.4	30-120	15.0	30		
Benzo (k) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.4	30-120	19.1	30		
Chrysene	0.0312	0.00500	"	0.0333	ND	93.7	30-120	14.3	30		
Dibenz (a,h) anthracene	0.0195	0.00500	"	0.0333	ND	58.6	30-120	17.4	30		
Fluoranthene	0.0205	0.00500	"	0.0333	ND	61.4	30-120	16.5	30		
Fluorene	0.0224	0.00500	"	0.0333	ND	67.1	30-120	10.0	30		
Indeno (1,2,3-cd) pyrene	0.0218	0.00500	"	0.0333	ND	65.5	30-120	19.6	30		
Pyrene	0.0315	0.00500	"	0.0333	ND	94.5	35-142	18.5	30		
1-Methylnaphthalene	0.0232	0.00500	"	0.0333	ND	69.7	15-130	8.73	50		
2-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	48.0	15-130	5.98	50		
Surrogate: 2-Methylnaphthalene-d10	0.0245		"	0.0333		73.5	40-150				
Surrogate: Fluoranthene-d10	0.0209		"	0.0333		62.8	40-150				

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0563 - EPA 3050B

Blank (BGB0563-BLK1)

Prepared: 02/19/23 Analyzed: 02/20/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGB0563-BS1)

Prepared: 02/19/23 Analyzed: 02/20/23

Arsenic	45.8	0.200	mg/kg wet	40.0	114	80-120
Barium	42.2	0.400	"	40.0	105	80-120
Selenium	4.43	0.260	"	4.00	111	80-120

Duplicate (BGB0563-DUP1)

Source: 2302359-01

Prepared: 02/19/23 Analyzed: 02/21/23

Arsenic	0.563	0.200	mg/kg dry	0.581	3.15	20
Barium	12.5	0.400	"	13.3	6.27	20
Selenium	0.186	0.260	"	0.216	15.2	20

Matrix Spike (BGB0563-MS1)

Source: 2302359-01

Prepared: 02/19/23 Analyzed: 02/20/23

Arsenic	53.3	0.200	mg/kg dry	45.1	0.581	117	75-125
Barium	77.5	0.400	"	45.1	13.3	142	75-125
Selenium	5.07	0.260	"	4.51	0.216	108	75-125

QM-05

Matrix Spike Dup (BGB0563-MSD1)

Source: 2302359-01

Prepared: 02/19/23 Analyzed: 02/20/23

Arsenic	50.6	0.200	mg/kg dry	45.1	0.581	111	75-125	5.22	25
Barium	69.1	0.400	"	45.1	13.3	124	75-125	11.4	25
Selenium	5.35	0.260	"	4.51	0.216	114	75-125	5.50	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0587 - General Preparation

Duplicate (BGB0587-DUP1)

Source: 2302358-01

Prepared & Analyzed: 02/20/23

% Solids	89.8	%		89.3		0.636	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/22/23 10:56

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0565 - General Preparation

LCS (BGB0565-BS1)

Prepared & Analyzed: 02/19/23

pH	9.07	pH Units	9.18	98.8	95-105
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Duplicate (BGB0565-DUP1)

Source: 2302358-01

Prepared & Analyzed: 02/19/23

pH	7.93	pH Units	7.92	0.126	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

02/22/23 10:56

Notes and Definitions

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 02, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order #2302424

Enclosed are the results of analyses for samples received by Summit Scientific on 02/21/23 18:26. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury
President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/02/23 12:17

ANALYTICAL REPORT FOR SAMPLES

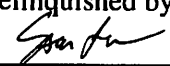
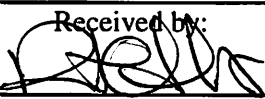

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS177@8'	2302424-01	Soil	02/21/23 08:44	02/21/23 18:26
SS178@10'	2302424-02	Soil	02/21/23 08:49	02/21/23 18:26
SS179@8'	2302424-03	Soil	02/21/23 11:02	02/21/23 18:26
SS180@10'	2302424-04	Soil	02/21/23 11:06	02/21/23 18:26
SS181@12'	2302424-05	Soil	02/21/23 11:10	02/21/23 18:26
SS182@2.5'	2302424-06	Soil	02/21/23 11:23	02/21/23 18:26

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

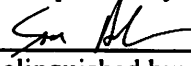


Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Warning 3,4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR [★]	PAHs [★]	Metals [★]		
1	SS171e8'	2/21/23	844	2			X			X			X	X	X		X	X	X		
2	SS178e16'	↓	849	↓			↓			↓			↓	↓	↓		↓	↓	↓		
3	SS179e8'	↓	1102	↓			↓			↓			↓	↓	↓		↓	↓	↓		
4	SS180e10'	↓	1106	↓			↓			↓			↓	↓	↓		↓	↓	↓		
5	SS181e12'	↓	1110	↓			↓			↓			↓	↓	↓		↓	↓	↓		
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 2/21/23 1303	Received by: Tasman Lockbox	Date/Time: 2/21/23 1303	TAT Business Days	Field DO	Notes: * = pH only * = PAHs = Chrysene, Pyrene, Fluorene, 1-m, 2-m. * = Metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman Lockbox	Date/Time: 2/21/23 1826	Received by: 	Date/Time: 2/21/23 1826	Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 8.0	Corrected Temperature: 	IR gun #: 1	HNO3 lot #:	Standard <input checked="" type="checkbox"/>	Field Turb.	

Client: PDC / Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W 119th Ave		Project Manager: Mark Longhurst		Company: PDC Energy	
City/State/Zip: Broomfield / CO / 80220		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
Phone: 303-487-1228		Project Name: Wecning 3,4-2 Tank Battery		AFE#:	
Sampler Name: S. Anderson		Project Number:		PO/Billing Codes:	
				Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAHs	Metals		
1	SS182e 2.5'	2/21/23	1123	1			X			X						X	X				
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 2/21/23 1303	Received by: Tasman Lockbox	Date/Time: 2/21/23 1303	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lockbox	Date/Time: 2/21/23 1826	Received by: 	Date/Time: 2/21/23 1826	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 8.0	Corrected Temperature: 	IR gun #: 1	HNO3 lot #:			

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2302424Client: PDC Hasman Client Project ID: Werning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) ☐ Thermometer # ☐

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Date/Time

2.21.23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS177@8'
2302424-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/21/23 08:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGB0673	02/21/23	02/22/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/21/23 08:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0338	84.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0425	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/21/23 08:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGB0674	02/21/23	02/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/21/23 08:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.8	86.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS177@8'
2302424-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/21/23 08:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGB0728	02/23/23	02/23/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/21/23 08:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0288	86.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0230	69.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/21/23 08:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.762	0.200	mg/kg dry	1	BGB0676	02/21/23	02/23/23	EPA 6020B	
Barium	8.47	0.400	"	"	"	"	"	"	
Selenium	0.230	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/21/23 08:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7		%	1	BGB0698	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/21/23 08:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS177@8'
2302424-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.10	pH Units	1	BGB0721	02/22/23	02/22/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS178@10'
2302424-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/21/23 08:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGB0673	02/21/23	02/22/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/21/23 08:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0345	86.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0410	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0429	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/21/23 08:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGB0674	02/21/23	02/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/21/23 08:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.90	79.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS178@10'
2302424-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/21/23 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGB0728	02/23/23	02/23/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/21/23 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0280	84.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0247	74.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/21/23 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.232	0.200	mg/kg dry	1	BGB0676	02/21/23	02/23/23	EPA 6020B	
Barium	5.36	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/21/23 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6		%	1	BGB0698	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/21/23 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS178@10'
2302424-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.73	pH Units	1	BGB0721	02/22/23	02/22/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS179@8'
2302424-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/21/23 11:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGB0673	02/21/23	02/22/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/21/23 11:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0359	89.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0409	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0422	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/21/23 11:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGB0674	02/21/23	02/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/21/23 11:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.3	98.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS179@8'
2302424-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/21/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGB0728	02/23/23	02/23/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/21/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0176	52.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0148	44.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/21/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.76	0.200	mg/kg dry	1	BGB0676	02/21/23	02/23/23	EPA 6020B	
Barium	91.1	0.400	"	"	"	"	"	"	
Selenium	0.557	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/21/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	72.4		%	1	BGB0698	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/21/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS179@8'
2302424-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.77	pH Units	1	BGB0721	02/22/23	02/22/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS180@10'
2302424-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/21/23 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGB0673	02/21/23	02/22/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.038	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.030	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.022	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.7	0.50	"	"	"	"	"	"	

Date Sampled: **02/21/23 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0345	86.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0430	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/21/23 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGB0674	02/21/23	02/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/21/23 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.1	89.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS180@10'
2302424-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/21/23 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGB0728	02/23/23	02/24/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/21/23 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0217	65.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0199	59.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/21/23 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.18	0.200	mg/kg dry	1	BGB0676	02/21/23	02/23/23	EPA 6020B	
Barium	13.2	0.400	"	"	"	"	"	"	
Selenium	0.312	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/21/23 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.3		%	1	BGB0698	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/21/23 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS180@10'
2302424-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.53	pH Units	1	BGB0721	02/22/23	02/22/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS181@12'
2302424-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/21/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGB0673	02/21/23	02/22/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/21/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0339	84.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0410	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0425	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/21/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGB0674	02/21/23	02/22/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/21/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.1	96.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS181@12'
2302424-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/21/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BGB0728	02/23/23	02/24/23	EPA 8270D SIM	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/21/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0272	81.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0221	66.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/21/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.234	0.200	mg/kg dry	1	BGB0676	02/21/23	02/23/23	EPA 6020B	
Barium	4.72	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/21/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.9		%	1	BGB0698	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/21/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS181@12'
2302424-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.44	pH Units	1	BGB0721	02/22/23	02/22/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS182@2.5'
2302424-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/21/23 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0834	0.0100	mg/L	1	BGB0807	02/25/23	02/27/23	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **02/21/23 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	164	0.0514	mg/L dry	1	BGB0827	02/27/23	03/01/23	EPA 6020B	
Magnesium	14.2	0.0514	"	"	"	"	"	"	
Sodium	11.6	0.0514	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/21/23 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.233	0.00100	units	1	BGC0033	03/01/23	03/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/21/23 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.3		%	1	BGB0789	02/24/23	02/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/21/23 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.112	0.0100	mmhos/cm	1	BGB0864	02/28/23	02/28/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

SS182@2.5'
2302424-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/21/23 11:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.22			pH Units	1	BGB0866	02/28/23	02/28/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0673 - EPA 5030 Soil MS

Blank (BGB0673-BLK1)

Prepared: 02/21/23 Analyzed: 02/22/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0319		"	0.0400		79.7	50-150			
Surrogate: Toluene-d8	0.0375		"	0.0400		93.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		94.0	50-150			

Blank (BGB0673-BLK2)

Prepared: 02/21/23 Analyzed: 02/22/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0352		"	0.0400		88.0	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0435		"	0.0400		109	50-150			

LCS (BGB0673-BS1)

Prepared: 02/21/23 Analyzed: 02/22/23

Benzene	0.0921	0.0020	mg/kg	0.100		92.1	70-130			
Toluene	0.0865	0.0050	"	0.100		86.5	70-130			
Ethylbenzene	0.104	0.0050	"	0.100		104	70-130			
m,p-Xylene	0.206	0.010	"	0.200		103	70-130			
o-Xylene	0.0966	0.0050	"	0.100		96.6	70-130			
1,2,4-Trimethylbenzene	0.0968	0.0050	"	0.100		96.8	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.0957	0.0038	"	0.100		95.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0283		"	0.0400		70.8	50-150			
Surrogate: Toluene-d8	0.0372		"	0.0400		93.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0357		"	0.0400		89.2	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0673 - EPA 5030 Soil MS

LCS (BGB0673-BS2)

Prepared: 02/21/23 Analyzed: 02/22/23

Benzene	0.116	0.0020	mg/kg	0.100		116	70-130
Toluene	0.121	0.0050	"	0.100		121	70-130
Ethylbenzene	0.124	0.0050	"	0.100		124	70-130
m,p-Xylene	0.243	0.010	"	0.200		122	70-130
o-Xylene	0.115	0.0050	"	0.100		115	70-130
1,2,4-Trimethylbenzene	0.126	0.0050	"	0.100		126	70-130
1,3,5-Trimethylbenzene	0.126	0.0050	"	0.100		126	70-130
Naphthalene	0.0796	0.0038	"	0.100		79.6	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0400		89.6	50-150
Surrogate: Toluene-d8	0.0410		"	0.0400		102	50-150
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150

Matrix Spike (BGB0673-MS1)

Source: 2302398-01

Prepared: 02/21/23 Analyzed: 02/22/23

Benzene	0.0878	0.0020	mg/kg	0.100	ND	87.8	70-130
Toluene	0.0817	0.0050	"	0.100	ND	81.7	70-130
Ethylbenzene	0.0985	0.0050	"	0.100	ND	98.5	70-130
m,p-Xylene	0.196	0.010	"	0.200	ND	98.2	70-130
o-Xylene	0.0937	0.0050	"	0.100	ND	93.7	70-130
1,2,4-Trimethylbenzene	0.0946	0.0050	"	0.100	ND	94.6	70-130
1,3,5-Trimethylbenzene	0.0972	0.0050	"	0.100	ND	97.2	70-130
Naphthalene	0.0719	0.0038	"	0.100	ND	71.9	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0297		"	0.0400		74.3	50-150
Surrogate: Toluene-d8	0.0372		"	0.0400		93.0	50-150
Surrogate: 4-Bromofluorobenzene	0.0358		"	0.0400		89.5	50-150

Matrix Spike (BGB0673-MS2)

Source: 2302424-05

Prepared: 02/21/23 Analyzed: 02/22/23

Benzene	0.115	0.0020	mg/kg	0.100	ND	115	70-130
Toluene	0.120	0.0050	"	0.100	ND	120	70-130
Ethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130
m,p-Xylene	0.237	0.010	"	0.200	ND	119	70-130
o-Xylene	0.113	0.0050	"	0.100	ND	113	70-130
1,2,4-Trimethylbenzene	0.126	0.0050	"	0.100	ND	126	70-130
1,3,5-Trimethylbenzene	0.125	0.0050	"	0.100	ND	125	70-130
Naphthalene	0.0852	0.0038	"	0.100	ND	85.2	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0367		"	0.0400		91.6	50-150
Surrogate: Toluene-d8	0.0411		"	0.0400		103	50-150
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		102	50-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0673 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0673-MSD1)

Source: 2302398-01

Prepared: 02/21/23 Analyzed: 02/22/23

Benzene	0.0936	0.0020	mg/kg	0.100	ND	93.6	70-130	6.35	30	
Toluene	0.0874	0.0050	"	0.100	ND	87.4	70-130	6.85	30	
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	3.71	30	
m,p-Xylene	0.203	0.010	"	0.200	ND	102	70-130	3.54	30	
o-Xylene	0.0971	0.0050	"	0.100	ND	97.1	70-130	3.59	30	
1,2,4-Trimethylbenzene	0.0978	0.0050	"	0.100	ND	97.8	70-130	3.31	30	
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	4.49	30	
Naphthalene	0.0751	0.0038	"	0.100	ND	75.1	70-130	4.28	30	
Surrogate: 1,2-Dichloroethane-d4	0.0299		"	0.0400		74.7	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400		92.0	50-150			

Matrix Spike Dup (BGB0673-MSD2)

Source: 2302424-05

Prepared: 02/21/23 Analyzed: 02/22/23

Benzene	0.115	0.0020	mg/kg	0.100	ND	115	70-130	0.105	30	
Toluene	0.120	0.0050	"	0.100	ND	120	70-130	0.324	30	
Ethylbenzene	0.123	0.0050	"	0.100	ND	123	70-130	3.40	30	
m,p-Xylene	0.244	0.010	"	0.200	ND	122	70-130	2.81	30	
o-Xylene	0.113	0.0050	"	0.100	ND	113	70-130	0.0531	30	
1,2,4-Trimethylbenzene	0.126	0.0050	"	0.100	ND	126	70-130	0.143	30	
1,3,5-Trimethylbenzene	0.129	0.0050	"	0.100	ND	129	70-130	2.91	30	
Naphthalene	0.0849	0.0038	"	0.100	ND	84.9	70-130	0.388	30	
Surrogate: 1,2-Dichloroethane-d4	0.0357		"	0.0400		89.2	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		102	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0674 - EPA 3550A

Blank (BGB0674-BLK1)

Prepared: 02/21/23 Analyzed: 02/22/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.1		"	12.5		88.8	30-150			

Blank (BGB0674-BLK2)

Prepared: 02/21/23 Analyzed: 02/22/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.5		"	12.5		108	30-150			

LCS (BGB0674-BS1)

Prepared: 02/21/23 Analyzed: 02/22/23

C10-C28 (DRO)	456	50	mg/kg	500		91.3	70-130			
Surrogate: o-Terphenyl	11.3		"	12.5		90.3	30-150			

LCS (BGB0674-BS2)

Prepared: 02/21/23 Analyzed: 02/22/23

C10-C28 (DRO)	462	50	mg/kg	500		92.3	70-130			
Surrogate: o-Terphenyl	13.8		"	12.5		111	30-150			

Matrix Spike (BGB0674-MS1)

Source: 2302398-01

Prepared: 02/21/23 Analyzed: 02/22/23

C10-C28 (DRO)	413	50	mg/kg	500	10.6	80.5	70-130			
Surrogate: o-Terphenyl	11.2		"	12.5		89.8	30-150			

Matrix Spike (BGB0674-MS2)

Source: 2302424-05

Prepared: 02/21/23 Analyzed: 02/22/23

C10-C28 (DRO)	484	50	mg/kg	500	15.0	93.8	70-130			
Surrogate: o-Terphenyl	15.5		"	12.5		124	30-150			

Matrix Spike Dup (BGB0674-MSD1)

Source: 2302398-01

Prepared: 02/21/23 Analyzed: 02/22/23

C10-C28 (DRO)	425	50	mg/kg	500	10.6	82.9	70-130	2.80	20	
Surrogate: o-Terphenyl	11.6		"	12.5		92.6	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BGB0674 - EPA 3550A

Matrix Spike Dup (BGB0674-MSD2)

Source: 2302424-05

Prepared: 02/21/23 Analyzed: 02/22/23

C10-C28 (DRO)	433	50	mg/kg	500	15.0	83.7	70-130	11.0	20	
Surrogate: o-Terphenyl	13.6		"	12.5		109	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result		%REC	Limits	RPD	Limit
											Notes

Batch BGB0728 - EPA 5030 Soil MS

Blank (BGB0728-BLK1)

Prepared & Analyzed: 02/23/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0390		"	0.0333		117		40-150			
Surrogate: Fluoranthene-d10	0.0253		"	0.0333		75.8		40-150			

LCS (BGB0728-BS1)

Prepared & Analyzed: 02/23/23

Acenaphthene	0.0361	0.00500	mg/kg	0.0333		108		31-137			
Anthracene	0.0299	0.00500	"	0.0333		89.8		30-120			
Benzo (a) anthracene	0.0236	0.00500	"	0.0333		70.9		30-120			
Benzo (a) pyrene	0.0341	0.00500	"	0.0333		102		30-120			
Benzo (b) fluoranthene	0.0283	0.00500	"	0.0333		84.9		30-120			
Benzo (k) fluoranthene	0.0336	0.00500	"	0.0333		101		30-120			
Chrysene	0.0331	0.00500	"	0.0333		99.3		30-120			
Dibenz (a,h) anthracene	0.0263	0.00500	"	0.0333		78.9		30-120			
Fluoranthene	0.0341	0.00500	"	0.0333		102		30-120			
Fluorene	0.0284	0.00500	"	0.0333		85.1		30-120			
Indeno (1,2,3-cd) pyrene	0.0263	0.00500	"	0.0333		78.9		30-120			
Pyrene	0.0315	0.00500	"	0.0333		94.5		35-142			
1-Methylnaphthalene	0.0273	0.00500	"	0.0333		82.0		35-142			
2-Methylnaphthalene	0.0292	0.00500	"	0.0333		87.5		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0284		"	0.0333		85.2		40-150			
Surrogate: Fluoranthene-d10	0.0330		"	0.0333		98.9		40-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0728 - EPA 5030 Soil MS

Matrix Spike (BGB0728-MS1)

Source: 2302377-01

Prepared & Analyzed: 02/23/23

Acenaphthene	0.0284	0.00500	mg/kg	0.0333	ND	85.2	31-137		
Anthracene	0.0235	0.00500	"	0.0333	ND	70.5	30-120		
Benzo (a) anthracene	0.0227	0.00500	"	0.0333	ND	68.2	30-120		
Benzo (a) pyrene	0.0261	0.00500	"	0.0333	ND	78.2	30-120		
Benzo (b) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.7	30-120		
Benzo (k) fluoranthene	0.0244	0.00500	"	0.0333	ND	73.3	30-120		
Chrysene	0.0241	0.00500	"	0.0333	ND	72.4	30-120		
Dibenz (a,h) anthracene	0.0205	0.00500	"	0.0333	ND	61.4	30-120		
Fluoranthene	0.0264	0.00500	"	0.0333	ND	79.2	30-120		
Fluorene	0.0228	0.00500	"	0.0333	ND	68.5	30-120		
Indeno (1,2,3-cd) pyrene	0.0206	0.00500	"	0.0333	ND	61.7	30-120		
Pyrene	0.0241	0.00500	"	0.0333	ND	72.2	35-142		
1-Methylnaphthalene	0.0223	0.00500	"	0.0333	ND	66.8	15-130		
2-Methylnaphthalene	0.0248	0.00500	"	0.0333	ND	74.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0239		"	0.0333		71.6	40-150		
Surrogate: Fluoranthene-d10	0.0256		"	0.0333		76.9	40-150		

Matrix Spike Dup (BGB0728-MSD1)

Source: 2302377-01

Prepared & Analyzed: 02/23/23

Acenaphthene	0.0213	0.00500	mg/kg	0.0333	ND	64.0	31-137	28.5	30
Anthracene	0.0191	0.00500	"	0.0333	ND	57.3	30-120	20.7	30
Benzo (a) anthracene	0.0179	0.00500	"	0.0333	ND	53.8	30-120	23.6	30
Benzo (a) pyrene	0.0198	0.00500	"	0.0333	ND	59.4	30-120	27.3	30
Benzo (b) fluoranthene	0.0214	0.00500	"	0.0333	ND	64.1	30-120	0.552	30
Benzo (k) fluoranthene	0.0205	0.00500	"	0.0333	ND	61.5	30-120	17.5	30
Chrysene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	23.8	30
Dibenz (a,h) anthracene	0.0169	0.00500	"	0.0333	ND	50.8	30-120	18.7	30
Fluoranthene	0.0209	0.00500	"	0.0333	ND	62.6	30-120	23.4	30
Fluorene	0.0184	0.00500	"	0.0333	ND	55.1	30-120	21.6	30
Indeno (1,2,3-cd) pyrene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	24.0	30
Pyrene	0.0190	0.00500	"	0.0333	ND	57.0	35-142	23.5	30
1-Methylnaphthalene	0.0190	0.00500	"	0.0333	ND	57.1	15-130	15.6	50
2-Methylnaphthalene	0.0205	0.00500	"	0.0333	ND	61.6	15-130	18.6	50
Surrogate: 2-Methylnaphthalene-d10	0.0206		"	0.0333		61.8	40-150		
Surrogate: Fluoranthene-d10	0.0200		"	0.0333		60.1	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0807 - EPA 3050B

Blank (BGB0807-BLK1)

Prepared: 02/25/23 Analyzed: 02/27/23

Boron ND 0.0100 mg/L

LCS (BGB0807-BS1)

Prepared: 02/25/23 Analyzed: 02/27/23

Boron 5.49 0.0100 mg/L 5.00 110 80-120

Duplicate (BGB0807-DUP1)

Source: 2302424-06

Prepared: 02/25/23 Analyzed: 02/28/23

Boron 0.0705 0.0100 mg/L 0.0834 16.7 20

Matrix Spike (BGB0807-MS1)

Source: 2302424-06

Prepared: 02/25/23 Analyzed: 02/28/23

Boron 5.05 0.0100 mg/L 5.00 0.0834 99.4 75-125

Matrix Spike Dup (BGB0807-MSD1)

Source: 2302424-06

Prepared: 02/25/23 Analyzed: 02/28/23

Boron 5.25 0.0100 mg/L 5.00 0.0834 103 75-125 3.74 25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0676 - EPA 3050B

Blank (BGB0676-BLK1)

Prepared: 02/21/23 Analyzed: 02/22/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGB0676-BS1)

Prepared: 02/21/23 Analyzed: 02/22/23

Arsenic	38.6	0.200	mg/kg wet	40.0	96.4	80-120
Barium	34.4	0.400	"	40.0	86.0	80-120
Selenium	4.18	0.260	"	4.00	105	80-120

Duplicate (BGB0676-DUP1)

Source: 2302373-01

Prepared: 02/21/23 Analyzed: 02/23/23

Arsenic	2.94	0.200	mg/kg dry	2.57	13.3	20
Barium	120	0.400	"	112	6.64	20
Selenium	0.284	0.260	"	0.254	11.4	20

Matrix Spike (BGB0676-MS1)

Source: 2302373-01

Prepared: 02/21/23 Analyzed: 02/23/23

Arsenic	42.2	0.200	mg/kg dry	44.3	2.57	89.4	75-125
Barium	147	0.400	"	44.3	112	79.2	75-125
Selenium	3.94	0.260	"	4.43	0.254	83.2	75-125

Matrix Spike Dup (BGB0676-MSD1)

Source: 2302373-01

Prepared: 02/21/23 Analyzed: 02/23/23

Arsenic	42.5	0.200	mg/kg dry	44.3	2.57	90.0	75-125	0.624	25	QM-05
Barium	169	0.400	"	44.3	112	129	75-125	14.0	25	
Selenium	3.81	0.260	"	4.43	0.254	80.3	75-125	3.34	25	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/02/23 12:17

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0827 - General Preparation

Blank (BGB0827-BLK1)

Prepared: 02/27/23 Analyzed: 03/01/23

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BGB0827-BS1)

Prepared: 02/27/23 Analyzed: 03/01/23

Calcium	5.37	0.0500	mg/L wet	5.00	107	70-130
Magnesium	5.99	0.0500	"	5.00	120	70-130
Sodium	6.03	0.0500	"	5.00	121	70-130

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0698 - General Preparation

Duplicate (BGB0698-DUP1)		Source: 2302365-01			Prepared & Analyzed: 02/22/23					
% Solids	82.2		%		81.4			0.959	20	

Batch BGB0789 - General Preparation

Duplicate (BGB0789-DUP1)		Source: 2301216-29			Prepared: 02/24/23 Analyzed: 02/25/23					
% Solids	86.5		%		80.1			7.65	20	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting			Spike	Source	%REC		RPD		
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	

Batch BGB0864 - General Preparation

Blank (BGB0864-BLK1)

Prepared & Analyzed: 02/28/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGB0864-BS1)

Prepared & Analyzed: 02/28/23

Specific Conductance (EC) 0.145 0.0100 mmhos/cm 0.150 96.8 95-105

Duplicate (BGB0864-DUP1)

Source: 2302295-01

Prepared & Analyzed: 02/28/23

Specific Conductance (EC) 0.228 0.0100 mmhos/cm 0.236 3.62 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/02/23 12:17

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0721 - General Preparation

LCS (BGB0721-BS1)

Prepared & Analyzed: 02/22/23

pH	9.16		pH Units	9.18		99.8	95-105		
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Duplicate (BGB0721-DUP1)

Source: 2302424-01

Prepared & Analyzed: 02/22/23

pH	8.10		pH Units		8.10			0.00	20
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Batch BGB0866 - General Preparation

LCS (BGB0866-BS1)

Prepared & Analyzed: 02/28/23

pH	9.02		pH Units				95-105		
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Duplicate (BGB0866-DUP1)

Source: 2302295-01

Prepared & Analyzed: 02/28/23

pH	7.69		pH Units		7.63			0.783	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/02/23 12:17

Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 28, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2302451

Enclosed are the results of analyses for samples received by Summit Scientific on 02/23/23 17:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely". The signature is written in a cursive, flowing style. It is positioned on a light gray rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS183@8'	2302451-01	Soil	02/23/23 09:45	02/23/23 17:35
SS184@10'	2302451-02	Soil	02/23/23 09:49	02/23/23 17:35
SS185@10'	2302451-03	Soil	02/23/23 10:44	02/23/23 17:35

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client: PDC / Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W 119th Ave		Project Manager: Mark Longhurst		Company: PDC Energy	
City/State/Zip: Broomfield / CO / 80220		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
Phone: 303-487-1228		Project Name: Werning 3,4-2 Tank Battery		AFE#:	
Sampler Name: G. Anderson		Project Number:		PO/Billing Codes:	
				Contact: Mark Longhurst	

					Preservative				Matrix			Analysis Requested							Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAHs	Metals	
1	SS18308'	2/23/23	945	2			X			X			X	X	X		X	X	X	
2	SS184210'		949																	
3	SS185 C10'		1044																	
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <i>San Fil</i>	Date/Time: 2/23/23 1532	Received by: Tasman Lockbox	Date/Time: 2/23/23 1537	TAT Business Days	Field DO	Notes: * = pH only * = PAH's = Chrysene, Pyrene, Fluorene, 1-m, 2-m, * = Metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman Lockbox	Date/Time: 22323 1735	Received by: <i>[Signature]</i>	Date/Time: 22323 1735	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt: 7.2	Corrected Temperature: <i>8</i>	IR gun #: <i>1</i>	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2302451Client: ROC FrismanClient Project ID: Warning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 7.2Thermometer # i

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

AS

Custodian Printed Name

2/23/23

Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

SS183@8'
2302451-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/23/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0762	02/23/23	02/23/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/23/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		59.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		93.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/23/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0763	02/23/23	02/23/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/23/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		111 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

SS183@8'
2302451-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/23/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0764	02/24/23	02/25/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/23/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		72.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/23/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.967	0.200		mg/kg dry	1	BGB0775	02/24/23	02/27/23	EPA 6020B	
Barium	122	0.400		"	"	"	"	"	"	
Selenium	1.15	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/23/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.7			%	1	BGB0771	02/24/23	02/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/23/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

SS183@8'
2302451-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.03	pH Units	1	BGB0782	02/24/23	02/24/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

SS184@10'
2302451-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/23/23 09:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0762	02/23/23	02/23/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/23/23 09:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		81.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/23/23 09:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0763	02/23/23	02/23/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/23/23 09:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		104 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

SS184@10'
2302451-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/23/23 09:49**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0764	02/24/23	02/25/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/23/23 09:49**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		82.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/23/23 09:49**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGB0775	02/24/23	02/27/23	EPA 6020B	
Barium	8.11	0.400		"	"	"	"	"	"	
Selenium	0.300	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/23/23 09:49**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.0			%	1	BGB0771	02/24/23	02/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/23/23 09:49**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

SS184@10'
2302451-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.45	pH Units	1	BGB0782	02/24/23	02/24/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

SS185@10'
2302451-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/23/23 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0762	02/23/23	02/23/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/23/23 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		72.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.3 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/23/23 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0763	02/23/23	02/23/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/23/23 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		115 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

SS185@10'
2302451-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/23/23 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGB0764	02/24/23	02/25/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/23/23 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		82.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		68.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/23/23 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.340	0.200		mg/kg dry	1	BGB0775	02/24/23	02/27/23	EPA 6020B	
Barium	8.06	0.400		"	"	"	"	"	"	
Selenium	0.521	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/23/23 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.1			%	1	BGB0771	02/24/23	02/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/23/23 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	02/28/23 16:20

SS185@10'
2302451-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.68	pH Units	1	BGB0782	02/24/23	02/24/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0762 - EPA 5030 Soil MS

Blank (BGB0762-BLK1)

Prepared & Analyzed: 02/23/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0305		"	0.0400		76.3	50-150			
Surrogate: Toluene-d8	0.0372		"	0.0400		93.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		95.1	50-150			

LCS (BGB0762-BS1)

Prepared & Analyzed: 02/23/23

Benzene	0.0898	0.0020	mg/kg	0.100		89.8	70-130			
Toluene	0.0886	0.0050	"	0.100		88.6	70-130			
Ethylbenzene	0.103	0.0050	"	0.100		103	70-130			
m,p-Xylene	0.201	0.010	"	0.200		100	70-130			
o-Xylene	0.0935	0.0050	"	0.100		93.5	70-130			
1,2,4-Trimethylbenzene	0.0954	0.0050	"	0.100		95.4	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.0985	0.0038	"	0.100		98.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0268		"	0.0400		67.1	50-150			
Surrogate: Toluene-d8	0.0374		"	0.0400		93.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0362		"	0.0400		90.6	50-150			

Matrix Spike (BGB0762-MS1)

Source: 2302449-01

Prepared & Analyzed: 02/23/23

Benzene	0.0859	0.0020	mg/kg	0.100	ND	85.9	70-130			
Toluene	0.0829	0.0050	"	0.100	ND	82.9	70-130			
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130			
m,p-Xylene	0.203	0.010	"	0.200	ND	102	70-130			
o-Xylene	0.0932	0.0050	"	0.100	ND	93.2	70-130			
1,2,4-Trimethylbenzene	0.0955	0.0050	"	0.100	ND	95.5	70-130			
1,3,5-Trimethylbenzene	0.0995	0.0050	"	0.100	ND	99.5	70-130			
Naphthalene	0.0707	0.0038	"	0.100	ND	70.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0260		"	0.0400		64.9	50-150			
Surrogate: Toluene-d8	0.0369		"	0.0400		92.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0400		90.9	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0762 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0762-MSD1)	Source: 2302449-01			Prepared & Analyzed: 02/23/23						
Benzene	0.0891	0.0020	mg/kg	0.100	ND	89.1	70-130	3.64	30	
Toluene	0.0856	0.0050	"	0.100	ND	85.6	70-130	3.24	30	
Ethylbenzene	0.0974	0.0050	"	0.100	ND	97.4	70-130	3.33	30	
m,p-Xylene	0.191	0.010	"	0.200	ND	95.7	70-130	5.88	30	
o-Xylene	0.0917	0.0050	"	0.100	ND	91.7	70-130	1.59	30	
1,2,4-Trimethylbenzene	0.0924	0.0050	"	0.100	ND	92.4	70-130	3.26	30	
1,3,5-Trimethylbenzene	0.0955	0.0050	"	0.100	ND	95.5	70-130	4.15	30	
Naphthalene	0.0776	0.0038	"	0.100	ND	77.6	70-130	9.35	30	
Surrogate: 1,2-Dichloroethane-d4	0.0301		"	0.0400		75.3	50-150			
Surrogate: Toluene-d8	0.0380		"	0.0400		95.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400		92.0	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0763 - EPA 3550A

Blank (BGB0763-BLK1)

Prepared & Analyzed: 02/23/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.4		"	12.5	115	30-150				

LCS (BGB0763-BS1)

Prepared & Analyzed: 02/23/23

C10-C28 (DRO)	510	50	mg/kg	500	102	70-130				
Surrogate: o-Terphenyl	16.8		"	12.5	135	30-150				

Matrix Spike (BGB0763-MS1)

Source: 2302449-01

Prepared & Analyzed: 02/23/23

C10-C28 (DRO)	521	50	mg/kg	500	12.9	102	70-130			
Surrogate: o-Terphenyl	13.2		"	12.5	106	30-150				

Matrix Spike Dup (BGB0763-MSD1)

Source: 2302449-01

Prepared & Analyzed: 02/23/23

C10-C28 (DRO)	552	50	mg/kg	500	12.9	108	70-130	5.79	20	
Surrogate: o-Terphenyl	14.9		"	12.5	119	30-150				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0764 - EPA 5030 Soil MS

Blank (BGB0764-BLK1)

Prepared: 02/24/23 Analyzed: 02/25/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0349		"	0.0333		105	40-150			
Surrogate: Fluoranthene-d10	0.0334		"	0.0333		100	40-150			

LCS (BGB0764-BS1)

Prepared: 02/24/23 Analyzed: 02/25/23

Acenaphthene	0.0356	0.00500	mg/kg	0.0333		107	31-137			
Anthracene	0.0352	0.00500	"	0.0333		105	30-120			
Benzo (a) anthracene	0.0369	0.00500	"	0.0333		111	30-120			
Benzo (a) pyrene	0.0377	0.00500	"	0.0333		113	30-120			
Benzo (b) fluoranthene	0.0382	0.00500	"	0.0333		115	30-120			
Benzo (k) fluoranthene	0.0380	0.00500	"	0.0333		114	30-120			
Chrysene	0.0373	0.00500	"	0.0333		112	30-120			
Dibenz (a,h) anthracene	0.0310	0.00500	"	0.0333		93.0	30-120			
Fluoranthene	0.0357	0.00500	"	0.0333		107	30-120			
Fluorene	0.0343	0.00500	"	0.0333		103	30-120			
Indeno (1,2,3-cd) pyrene	0.0353	0.00500	"	0.0333		106	30-120			
Pyrene	0.0354	0.00500	"	0.0333		106	35-142			
1-Methylnaphthalene	0.0281	0.00500	"	0.0333		84.2	35-142			
2-Methylnaphthalene	0.0313	0.00500	"	0.0333		93.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0327		"	0.0333		98.2	40-150			
Surrogate: Fluoranthene-d10	0.0368		"	0.0333		111	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0764 - EPA 5030 Soil MS

Matrix Spike (BGB0764-MS1)

Source: 2302415-01

Prepared: 02/24/23 Analyzed: 02/25/23

Acenaphthene	0.0264	0.00500	mg/kg	0.0333	ND	79.1	31-137		
Anthracene	0.0272	0.00500	"	0.0333	ND	81.5	30-120		
Benzo (a) anthracene	0.0285	0.00500	"	0.0333	ND	85.6	30-120		
Benzo (a) pyrene	0.0264	0.00500	"	0.0333	ND	79.1	30-120		
Benzo (b) fluoranthene	0.0279	0.00500	"	0.0333	ND	83.8	30-120		
Benzo (k) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.6	30-120		
Chrysene	0.0278	0.00500	"	0.0333	ND	83.4	30-120		
Dibenz (a,h) anthracene	0.0208	0.00500	"	0.0333	ND	62.4	30-120		
Fluoranthene	0.0265	0.00500	"	0.0333	ND	79.4	30-120		
Fluorene	0.0255	0.00500	"	0.0333	ND	76.4	30-120		
Indeno (1,2,3-cd) pyrene	0.0263	0.00500	"	0.0333	ND	78.9	30-120		
Pyrene	0.0296	0.00500	"	0.0333	ND	88.8	35-142		
1-Methylnaphthalene	0.0284	0.00500	"	0.0333	ND	85.3	15-130		
2-Methylnaphthalene	0.0271	0.00500	"	0.0333	ND	81.4	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0269		"	0.0333		80.7	40-150		
Surrogate: Fluoranthene-d10	0.0260		"	0.0333		78.1	40-150		

Matrix Spike Dup (BGB0764-MSD1)

Source: 2302415-01

Prepared: 02/24/23 Analyzed: 02/25/23

Acenaphthene	0.0256	0.00500	mg/kg	0.0333	ND	76.9	31-137	2.86	30
Anthracene	0.0248	0.00500	"	0.0333	ND	74.3	30-120	9.27	30
Benzo (a) anthracene	0.0278	0.00500	"	0.0333	ND	83.3	30-120	2.75	30
Benzo (a) pyrene	0.0262	0.00500	"	0.0333	ND	78.6	30-120	0.681	30
Benzo (b) fluoranthene	0.0278	0.00500	"	0.0333	ND	83.5	30-120	0.351	30
Benzo (k) fluoranthene	0.0262	0.00500	"	0.0333	ND	78.6	30-120	1.34	30
Chrysene	0.0266	0.00500	"	0.0333	ND	79.9	30-120	4.29	30
Dibenz (a,h) anthracene	0.0200	0.00500	"	0.0333	ND	60.1	30-120	3.85	30
Fluoranthene	0.0248	0.00500	"	0.0333	ND	74.5	30-120	6.41	30
Fluorene	0.0254	0.00500	"	0.0333	ND	76.2	30-120	0.287	30
Indeno (1,2,3-cd) pyrene	0.0251	0.00500	"	0.0333	ND	75.3	30-120	4.62	30
Pyrene	0.0285	0.00500	"	0.0333	ND	85.5	35-142	3.83	30
1-Methylnaphthalene	0.0233	0.00500	"	0.0333	ND	69.8	15-130	20.0	50
2-Methylnaphthalene	0.0254	0.00500	"	0.0333	ND	76.1	15-130	6.65	50
Surrogate: 2-Methylnaphthalene-d10	0.0237		"	0.0333		71.0	40-150		
Surrogate: Fluoranthene-d10	0.0248		"	0.0333		74.5	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0775 - EPA 3050B

Blank (BGB0775-BLK1)

Prepared & Analyzed: 02/24/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGB0775-BS1)

Prepared & Analyzed: 02/24/23

Arsenic	44.2	0.200	mg/kg wet	40.0	110	80-120
Barium	44.3	0.400	"	40.0	111	80-120
Selenium	4.70	0.260	"	4.00	117	80-120

Duplicate (BGB0775-DUP1)

Source: 2301216-29

Prepared & Analyzed: 02/24/23

Arsenic	2.39	0.200	mg/kg dry	2.72	13.0	20
Barium	124	0.400	"	132	6.45	20
Selenium	1.55	0.260	"	1.53	1.73	20

Matrix Spike (BGB0775-MS1)

Source: 2301216-29

Prepared & Analyzed: 02/24/23

Arsenic	50.1	0.200	mg/kg dry	49.9	2.72	94.9	75-125
Barium	173	0.400	"	49.9	132	80.6	75-125
Selenium	6.27	0.260	"	4.99	1.53	95.0	75-125

Matrix Spike Dup (BGB0775-MSD1)

Source: 2301216-29

Prepared & Analyzed: 02/24/23

Arsenic	50.7	0.200	mg/kg dry	49.9	2.72	96.1	75-125	1.18	25
Barium	176	0.400	"	49.9	132	86.7	75-125	1.75	25
Selenium	6.37	0.260	"	4.99	1.53	97.0	75-125	1.56	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0771 - General Preparation

Duplicate (BGB0771-DUP1)		Source: 2302413-01		Prepared: 02/24/23 Analyzed: 02/27/23	
% Solids	93.3		%	93.4	0.129 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0782 - General Preparation

LCS (BGB0782-BS1)

Prepared & Analyzed: 02/24/23

pH	9.05	pH Units	9.18	98.6	95-105
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Duplicate (BGB0782-DUP1)

Source: 2302451-01

Prepared & Analyzed: 02/24/23

pH	7.07	pH Units	7.03	0.567	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/28/23 16:20

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 01, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2302474

Enclosed are the results of analyses for samples received by Summit Scientific on 02/24/23 17:33. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS186@12'	2302474-01	Soil	02/24/23 08:21	02/24/23 17:33
SS187@12'	2302474-02	Soil	02/24/23 14:02	02/24/23 17:33

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Warning 3.4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ✖	PAHs ✖	Metals ✖			
1	SS186 c12'	2/24/23	821	2			X			X			X	X	X		X	X	X			
2	SS187 c12'	↓	1402	↓			↓			↓			↓	↓	↓		↓	↓	↓			
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by: <i>Sam AL</i>	Date/Time: 2/24/23 1504	Received by: Tasman Lockbox	Date/Time: 2/24/23 1504	TAT Business Days	Field DO	Notes: * = Pthly * = PAHs = Chrysene, Pyrene, Fluorene, 1-m, 2-m. * = Metals = Arsenic, Barium, Selenide.	
				Same Day	X		Field EC
Relinquished by: Tasman Lockbox	Date/Time: 2/24/23 1733	Received by: <i>[Signature]</i>	Date/Time: 2/24/23 1733	1 Day			Field ORP
				2 Days			Field pH
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days			Field Temp.
Temperature Upon Receipt: 7.3	Corrected Temperature: <i>[Signature]</i>	IR gun #: 1	HNO3 lot #:	Standard		Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2302474Client: DOC for sman Client Project ID: Werning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐☐Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 7.3Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS
Custodian Printed Name2/23/23
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

SS186@12'
2302474-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/24/23 08:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0800	02/24/23	02/25/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/24/23 08:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		96.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/24/23 08:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0802	02/24/23	02/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/24/23 08:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		112 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

SS186@12'
2302474-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/24/23 08:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0814	02/27/23	02/28/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/24/23 08:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		66.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		88.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/24/23 08:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.427	0.200		mg/kg dry	1	BGB0803	02/24/23	02/28/23	EPA 6020B	
Barium	5.73	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/24/23 08:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.3			%	1	BGB0820	02/27/23	02/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/24/23 08:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

SS186@12'
2302474-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.27	pH Units	1	BGB0806	02/25/23	02/25/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

SS187@12'
2302474-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/24/23 14:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0800	02/24/23	02/25/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/24/23 14:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		80.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		93.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/24/23 14:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0802	02/24/23	02/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/24/23 14:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		105 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

SS187@12'
2302474-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/24/23 14:02**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGB0814	02/27/23	02/28/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/24/23 14:02**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		53.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/24/23 14:02**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.443	0.200		mg/kg dry	1	BGB0803	02/24/23	02/28/23	EPA 6020B	
Barium	6.73	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/24/23 14:02**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.7			%	1	BGB0820	02/27/23	02/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/24/23 14:02**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

SS187@12'
2302474-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.09	pH Units	1	BGB0806	02/25/23	02/25/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0800 - EPA 5030 Soil MS

Blank (BGB0800-BLK1)

Prepared: 02/24/23 Analyzed: 02/25/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0331		"	0.0400		82.8	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150			

LCS (BGB0800-BS1)

Prepared: 02/24/23 Analyzed: 02/25/23

Benzene	0.0998	0.0020	mg/kg	0.100		99.8	70-130			
Toluene	0.119	0.0050	"	0.100		119	70-130			
Ethylbenzene	0.111	0.0050	"	0.100		111	70-130			
m,p-Xylene	0.243	0.010	"	0.200		121	70-130			
o-Xylene	0.107	0.0050	"	0.100		107	70-130			
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100		110	70-130			
1,3,5-Trimethylbenzene	0.110	0.0050	"	0.100		110	70-130			
Naphthalene	0.102	0.0038	"	0.100		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0292		"	0.0400		73.0	50-150			
Surrogate: Toluene-d8	0.0374		"	0.0400		93.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.3	50-150			

Matrix Spike (BGB0800-MS1)

Source: 2302464-01

Prepared: 02/24/23 Analyzed: 02/25/23

Benzene	0.0958	0.0020	mg/kg	0.100	ND	95.8	70-130			
Toluene	0.109	0.0050	"	0.100	ND	109	70-130			
Ethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130			
m,p-Xylene	0.235	0.010	"	0.200	ND	118	70-130			
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130			
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130			
1,3,5-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130			
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0262		"	0.0400		65.6	50-150			
Surrogate: Toluene-d8	0.0370		"	0.0400		92.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0363		"	0.0400		90.7	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0800 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0800-MSD1)

Source: 2302464-01

Prepared: 02/24/23 Analyzed: 02/25/23

Benzene	0.0961	0.0020	mg/kg	0.100	ND	96.1	70-130	0.281	30	
Toluene	0.108	0.0050	"	0.100	ND	108	70-130	0.804	30	
Ethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130	0.811	30	
m,p-Xylene	0.232	0.010	"	0.200	ND	116	70-130	1.68	30	
o-Xylene	0.108	0.0050	"	0.100	ND	108	70-130	2.13	30	
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	0.466	30	
1,3,5-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	0.109	30	
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130	2.31	30	
Surrogate: 1,2-Dichloroethane-d4	0.0292		"	0.0400		73.0	50-150			
Surrogate: Toluene-d8	0.0375		"	0.0400		93.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0378		"	0.0400		94.5	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0802 - EPA 3550A

Blank (BGB0802-BLK1)

Prepared: 02/24/23 Analyzed: 02/25/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.6		"	12.5		117	30-150			

LCS (BGB0802-BS1)

Prepared: 02/24/23 Analyzed: 02/25/23

C10-C28 (DRO)	498	50	mg/kg	500		99.5	70-130			
Surrogate: o-Terphenyl	14.3		"	12.5		114	30-150			

Matrix Spike (BGB0802-MS1)

Source: 2302464-01

Prepared: 02/24/23 Analyzed: 02/25/23

C10-C28 (DRO)	452	50	mg/kg	500	14.7	87.4	70-130			
Surrogate: o-Terphenyl	14.0		"	12.5		112	30-150			

Matrix Spike Dup (BGB0802-MSD1)

Source: 2302464-01

Prepared: 02/24/23 Analyzed: 02/25/23

C10-C28 (DRO)	452	50	mg/kg	500	14.7	87.5	70-130	0.152	20	
Surrogate: o-Terphenyl	13.5		"	12.5		108	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0814 - EPA 5030 Soil MS

Blank (BGB0814-BLK1)

Prepared & Analyzed: 02/27/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0355		"	0.0333		106		40-150			
Surrogate: Fluoranthene-d10	0.0340		"	0.0333		102		40-150			

LCS (BGB0814-BS1)

Prepared & Analyzed: 02/27/23

Acenaphthene	0.0315	0.00500	mg/kg	0.0333		94.5		31-137			
Anthracene	0.0323	0.00500	"	0.0333		96.8		30-120			
Benzo (a) anthracene	0.0302	0.00500	"	0.0333		90.6		30-120			
Benzo (a) pyrene	0.0291	0.00500	"	0.0333		87.2		30-120			
Benzo (b) fluoranthene	0.0296	0.00500	"	0.0333		88.8		30-120			
Benzo (k) fluoranthene	0.0291	0.00500	"	0.0333		87.3		30-120			
Chrysene	0.0315	0.00500	"	0.0333		94.5		30-120			
Dibenz (a,h) anthracene	0.0252	0.00500	"	0.0333		75.7		30-120			
Fluoranthene	0.0319	0.00500	"	0.0333		95.6		30-120			
Fluorene	0.0321	0.00500	"	0.0333		96.2		30-120			
Indeno (1,2,3-cd) pyrene	0.0191	0.00500	"	0.0333		57.2		30-120			
Pyrene	0.0324	0.00500	"	0.0333		97.1		35-142			
1-Methylnaphthalene	0.0381	0.00500	"	0.0333		114		35-142			
2-Methylnaphthalene	0.0296	0.00500	"	0.0333		88.7		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0275		"	0.0333		82.6		40-150			
Surrogate: Fluoranthene-d10	0.0330		"	0.0333		99.0		40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0814 - EPA 5030 Soil MS

Matrix Spike (BGB0814-MS1)

Source: 2302464-01

Prepared & Analyzed: 02/27/23

Acenaphthene	0.0217	0.00500	mg/kg	0.0333	ND	65.0	31-137		
Anthracene	0.0216	0.00500	"	0.0333	ND	64.9	30-120		
Benzo (a) anthracene	0.0225	0.00500	"	0.0333	ND	67.6	30-120		
Benzo (a) pyrene	0.0211	0.00500	"	0.0333	ND	63.4	30-120		
Benzo (b) fluoranthene	0.0216	0.00500	"	0.0333	ND	64.8	30-120		
Benzo (k) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.3	30-120		
Chrysene	0.0213	0.00500	"	0.0333	ND	63.9	30-120		
Dibenz (a,h) anthracene	0.0172	0.00500	"	0.0333	ND	51.6	30-120		
Fluoranthene	0.0227	0.00500	"	0.0333	ND	68.2	30-120		
Fluorene	0.0220	0.00500	"	0.0333	ND	66.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0143	0.00500	"	0.0333	ND	43.0	30-120		
Pyrene	0.0233	0.00500	"	0.0333	ND	69.9	35-142		
1-Methylnaphthalene	0.0273	0.00500	"	0.0333	ND	81.8	15-130		
2-Methylnaphthalene	0.0220	0.00500	"	0.0333	ND	66.1	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0209		"	0.0333		62.7	40-150		
Surrogate: Fluoranthene-d10	0.0229		"	0.0333		68.8	40-150		

Matrix Spike Dup (BGB0814-MSD1)

Source: 2302464-01

Prepared & Analyzed: 02/27/23

Acenaphthene	0.0264	0.00500	mg/kg	0.0333	ND	79.1	31-137	19.4	30
Anthracene	0.0264	0.00500	"	0.0333	ND	79.1	30-120	19.7	30
Benzo (a) anthracene	0.0281	0.00500	"	0.0333	ND	84.3	30-120	22.1	30
Benzo (a) pyrene	0.0262	0.00500	"	0.0333	ND	78.6	30-120	21.4	30
Benzo (b) fluoranthene	0.0274	0.00500	"	0.0333	ND	82.1	30-120	23.5	30
Benzo (k) fluoranthene	0.0264	0.00500	"	0.0333	ND	79.1	30-120	22.1	30
Chrysene	0.0263	0.00500	"	0.0333	ND	78.8	30-120	20.8	30
Dibenz (a,h) anthracene	0.0226	0.00500	"	0.0333	ND	67.8	30-120	27.1	30
Fluoranthene	0.0277	0.00500	"	0.0333	ND	83.0	30-120	19.7	30
Fluorene	0.0263	0.00500	"	0.0333	ND	78.9	30-120	17.6	30
Indeno (1,2,3-cd) pyrene	0.0182	0.00500	"	0.0333	ND	54.7	30-120	23.9	30
Pyrene	0.0293	0.00500	"	0.0333	ND	87.9	35-142	22.9	30
1-Methylnaphthalene	0.0327	0.00500	"	0.0333	ND	98.1	15-130	18.2	50
2-Methylnaphthalene	0.0258	0.00500	"	0.0333	ND	77.4	15-130	15.8	50
Surrogate: 2-Methylnaphthalene-d10	0.0214		"	0.0333		64.1	40-150		
Surrogate: Fluoranthene-d10	0.0291		"	0.0333		87.3	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0803 - EPA 3050B

Blank (BGB0803-BLK1)

Prepared: 02/24/23 Analyzed: 02/28/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGB0803-BS1)

Prepared: 02/24/23 Analyzed: 02/28/23

Arsenic	44.6	0.200	mg/kg wet	40.0	112	80-120
Barium	39.9	0.400	"	40.0	99.7	80-120
Selenium	4.72	0.260	"	4.00	118	80-120

Duplicate (BGB0803-DUP1)

Source: 2302472-01

Prepared: 02/24/23 Analyzed: 02/28/23

Arsenic	3.41	0.200	mg/kg dry	2.81	19.4	20
Barium	118	0.400	"	98.9	17.3	20
Selenium	0.223	0.260	"	0.215	3.68	20

Matrix Spike (BGB0803-MS1)

Source: 2302472-01

Prepared: 02/24/23 Analyzed: 02/28/23

Arsenic	61.0	0.200	mg/kg dry	53.6	2.81	109	75-125	QM-05
Barium	199	0.400	"	53.6	98.9	186	75-125	
Selenium	6.39	0.260	"	5.36	0.215	115	75-125	

Matrix Spike Dup (BGB0803-MSD1)

Source: 2302472-01

Prepared: 02/24/23 Analyzed: 02/28/23

Arsenic	61.1	0.200	mg/kg dry	53.6	2.81	109	75-125	0.105	25	QM-05
Barium	190	0.400	"	53.6	98.9	169	75-125	4.60	25	
Selenium	6.03	0.260	"	5.36	0.215	108	75-125	5.75	25	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0820 - General Preparation

Duplicate (BGB0820-DUP1)		Source: 2302295-01			Prepared & Analyzed: 02/27/23					
% Solids	88.1		%		87.6			0.573	20	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/01/23 14:50

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGB0806 - General Preparation

LCS (BGB0806-BS1)

Prepared & Analyzed: 02/25/23

pH	9.18	pH Units	9.18	100	95-105
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Duplicate (BGB0806-DUP1)

Source: 2302474-01

Prepared & Analyzed: 02/25/23

pH	7.14	pH Units	7.27	1.80	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/01/23 14:50

Notes and Definitions

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 10, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2303126

Enclosed are the results of analyses for samples received by Summit Scientific on 03/06/23 17:41. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS188@12'	2303126-01	Soil	03/06/23 10:01	03/06/23 17:41
SS189@12'	2303126-02	Soil	03/06/23 12:42	03/06/23 17:41

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Wesning 3,4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ★	PAHs ★	Metals ★			
1	SS188e12'	3/6/23	1001	2			X			X			X	X	X		X	X	X			
2	SS189e12'	3/6/23	1242	2			X			X			X	X	X		X	X	X			
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by:	Date/Time: 3/6/23 1627	Received by: Tasman Lockbox	Date/Time: 3/6/23 1627	TAT Business Days	Field DO	Notes: * = pH only * = PAHs = Chrysene, Pyrene, Fluorene, 1-m, 2-m. * = Metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman Lockbox	Date/Time: 3/6/23 1741	Received by:	Date/Time: 3/6/23 1741	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt: 9.1	Corrected Temperature:	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2303126Client: Pactasman Client Project ID: Warning 34-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #:

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 9.1Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ice</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

 Custodian Printed Name

3.6.23
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

SS188@12'
2303126-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/06/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0163	03/06/23	03/06/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/06/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		117 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/06/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0164	03/06/23	03/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/06/23 10:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		123 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

SS188@12'
2303126-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/06/23 10:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0171	03/07/23	03/07/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/06/23 10:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		86.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		84.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/06/23 10:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.357	0.200		mg/kg dry	1	BGC0169	03/06/23	03/09/23	EPA 6020B	
Barium	4.29	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/06/23 10:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6			%	1	BGC0178	03/07/23	03/08/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/06/23 10:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

SS188@12'
2303126-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	6.49	pH Units	1	BGC0181	03/07/23	03/07/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

SS189@12'
2303126-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/06/23 12:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0163	03/06/23	03/06/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/06/23 12:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		126 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/06/23 12:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0164	03/06/23	03/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/06/23 12:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		128 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

SS189@12'
2303126-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/06/23 12:42**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0171	03/07/23	03/07/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/06/23 12:42**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		81.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/06/23 12:42**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.276	0.200		mg/kg dry	1	BGC0169	03/06/23	03/09/23	EPA 6020B	
Barium	3.96	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/06/23 12:42**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.0			%	1	BGC0178	03/07/23	03/08/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/06/23 12:42**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

SS189@12'
2303126-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.12	pH Units	1	BGC0181	03/07/23	03/07/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0163 - EPA 5030 Soil MS

Blank (BGC0163-BLK1)

Prepared: 03/06/23 Analyzed: 03/07/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0472		"	0.0400		118	50-150			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	50-150			

LCS (BGC0163-BS1)

Prepared: 03/06/23 Analyzed: 03/07/23

Benzene	0.0892	0.0020	mg/kg	0.100		89.2	70-130			
Toluene	0.0779	0.0050	"	0.100		77.9	70-130			
Ethylbenzene	0.0935	0.0050	"	0.100		93.5	70-130			
m,p-Xylene	0.184	0.010	"	0.200		92.2	70-130			
o-Xylene	0.0872	0.0050	"	0.100		87.2	70-130			
1,2,4-Trimethylbenzene	0.0846	0.0050	"	0.100		84.6	70-130			
1,3,5-Trimethylbenzene	0.0859	0.0050	"	0.100		85.9	70-130			
Naphthalene	0.0733	0.0038	"	0.100		73.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0423		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		102	50-150			

Matrix Spike (BGC0163-MS1)

Source: 2303123-01

Prepared: 03/06/23 Analyzed: 03/07/23

Benzene	0.0866	0.0020	mg/kg	0.100	ND	86.6	70-130			
Toluene	0.0767	0.0050	"	0.100	ND	76.7	70-130			
Ethylbenzene	0.0891	0.0050	"	0.100	ND	89.1	70-130			
m,p-Xylene	0.178	0.010	"	0.200	ND	89.2	70-130			
o-Xylene	0.0847	0.0050	"	0.100	ND	84.7	70-130			
1,2,4-Trimethylbenzene	0.0832	0.0050	"	0.100	ND	83.2	70-130			
1,3,5-Trimethylbenzene	0.0836	0.0050	"	0.100	ND	83.6	70-130			
Naphthalene	0.0748	0.0038	"	0.100	ND	74.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0435		"	0.0400		109	50-150			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

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Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0163 - EPA 5030 Soil MS

Matrix Spike Dup (BGC0163-MSD1)

Source: 2303123-01

Prepared: 03/06/23 Analyzed: 03/07/23

Benzene	0.0849	0.0020	mg/kg	0.100	ND	84.9	70-130	1.89	30	
Toluene	0.0764	0.0050	"	0.100	ND	76.4	70-130	0.392	30	
Ethylbenzene	0.0902	0.0050	"	0.100	ND	90.2	70-130	1.27	30	
m,p-Xylene	0.180	0.010	"	0.200	ND	89.8	70-130	0.738	30	
o-Xylene	0.0837	0.0050	"	0.100	ND	83.7	70-130	1.18	30	
1,2,4-Trimethylbenzene	0.0821	0.0050	"	0.100	ND	82.1	70-130	1.38	30	
1,3,5-Trimethylbenzene	0.0853	0.0050	"	0.100	ND	85.3	70-130	1.92	30	
Naphthalene	0.0728	0.0038	"	0.100	ND	72.8	70-130	2.68	30	
Surrogate: 1,2-Dichloroethane-d4	0.0422		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	50-150			

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0164 - EPA 3550A

Blank (BGC0164-BLK1)

Prepared: 03/06/23 Analyzed: 03/07/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	15.3		"	12.5		122	30-150			

LCS (BGC0164-BS1)

Prepared: 03/06/23 Analyzed: 03/07/23

C10-C28 (DRO)	495	50	mg/kg	500		98.9	70-130			
Surrogate: o-Terphenyl	15.7		"	12.5		125	30-150			

Matrix Spike (BGC0164-MS1)

Source: 2303123-01

Prepared: 03/06/23 Analyzed: 03/07/23

C10-C28 (DRO)	472	50	mg/kg	500	15.3	91.4	70-130			
Surrogate: o-Terphenyl	11.3		"	12.5		90.3	30-150			

Matrix Spike Dup (BGC0164-MSD1)

Source: 2303123-01

Prepared: 03/06/23 Analyzed: 03/07/23

C10-C28 (DRO)	459	50	mg/kg	500	15.3	88.8	70-130	2.81	20	
Surrogate: o-Terphenyl	15.5		"	12.5		124	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result		%REC	Limits	RPD	Limit

Batch BGC0171 - EPA 5030 Soil MS

Blank (BGC0171-BLK1)

Prepared & Analyzed: 03/07/23

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0350	"	0.0333	105	40-150
Surrogate: Fluoranthene-d10	0.0313	"	0.0333	93.8	40-150

LCS (BGC0171-BS1)

Prepared & Analyzed: 03/07/23

Acenaphthene	0.0318	0.00500	mg/kg	0.0333	95.4	31-137
Anthracene	0.0343	0.00500	"	0.0333	103	30-120
Benzo (a) anthracene	0.0259	0.00500	"	0.0333	77.7	30-120
Benzo (a) pyrene	0.0322	0.00500	"	0.0333	96.7	30-120
Benzo (b) fluoranthene	0.0262	0.00500	"	0.0333	78.5	30-120
Benzo (k) fluoranthene	0.0376	0.00500	"	0.0333	113	30-120
Chrysene	0.0302	0.00500	"	0.0333	90.5	30-120
Dibenz (a,h) anthracene	0.0365	0.00500	"	0.0333	110	30-120
Fluoranthene	0.0366	0.00500	"	0.0333	110	30-120
Fluorene	0.0377	0.00500	"	0.0333	113	30-120
Indeno (1,2,3-cd) pyrene	0.0363	0.00500	"	0.0333	109	30-120
Pyrene	0.0328	0.00500	"	0.0333	98.3	35-142
1-Methylnaphthalene	0.0326	0.00500	"	0.0333	97.7	35-142
2-Methylnaphthalene	0.0303	0.00500	"	0.0333	90.8	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0364	"	0.0333	109	40-150
Surrogate: Fluoranthene-d10	0.0386	"	0.0333	116	40-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0171 - EPA 5030 Soil MS

Matrix Spike (BGC0171-MS1)

Source: 2303115-01

Prepared & Analyzed: 03/07/23

Acenaphthene	0.0221	0.00500	mg/kg	0.0333	ND	66.4	31-137		
Anthracene	0.0225	0.00500	"	0.0333	ND	67.5	30-120		
Benzo (a) anthracene	0.0211	0.00500	"	0.0333	ND	63.3	30-120		
Benzo (a) pyrene	0.0216	0.00500	"	0.0333	ND	64.8	30-120		
Benzo (b) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.1	30-120		
Benzo (k) fluoranthene	0.0244	0.00500	"	0.0333	ND	73.1	30-120		
Chrysene	0.0186	0.00500	"	0.0333	ND	55.8	30-120		
Dibenz (a,h) anthracene	0.0265	0.00500	"	0.0333	ND	79.5	30-120		
Fluoranthene	0.0247	0.00500	"	0.0333	ND	74.2	30-120		
Fluorene	0.0269	0.00500	"	0.0333	ND	80.7	30-120		
Indeno (1,2,3-cd) pyrene	0.0231	0.00500	"	0.0333	ND	69.4	30-120		
Pyrene	0.0226	0.00500	"	0.0333	ND	67.8	35-142		
1-Methylnaphthalene	0.0214	0.00500	"	0.0333	ND	64.3	15-130		
2-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0253		"	0.0333		75.8	40-150		
Surrogate: Fluoranthene-d10	0.0263		"	0.0333		78.9	40-150		

Matrix Spike Dup (BGC0171-MSD1)

Source: 2303115-01

Prepared & Analyzed: 03/07/23

Acenaphthene	0.0223	0.00500	mg/kg	0.0333	ND	66.8	31-137	0.599	30
Anthracene	0.0234	0.00500	"	0.0333	ND	70.1	30-120	3.79	30
Benzo (a) anthracene	0.0219	0.00500	"	0.0333	ND	65.6	30-120	3.63	30
Benzo (a) pyrene	0.0227	0.00500	"	0.0333	ND	68.2	30-120	5.23	30
Benzo (b) fluoranthene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	3.31	30
Benzo (k) fluoranthene	0.0250	0.00500	"	0.0333	ND	75.1	30-120	2.75	30
Chrysene	0.0198	0.00500	"	0.0333	ND	59.4	30-120	6.20	30
Dibenz (a,h) anthracene	0.0243	0.00500	"	0.0333	ND	73.0	30-120	8.58	30
Fluoranthene	0.0262	0.00500	"	0.0333	ND	78.6	30-120	5.75	30
Fluorene	0.0276	0.00500	"	0.0333	ND	82.9	30-120	2.64	30
Indeno (1,2,3-cd) pyrene	0.0242	0.00500	"	0.0333	ND	72.7	30-120	4.70	30
Pyrene	0.0241	0.00500	"	0.0333	ND	72.3	35-142	6.35	30
1-Methylnaphthalene	0.0232	0.00500	"	0.0333	ND	69.7	15-130	8.01	50
2-Methylnaphthalene	0.0248	0.00500	"	0.0333	ND	74.5	15-130	21.0	50
Surrogate: 2-Methylnaphthalene-d10	0.0255		"	0.0333		76.5	40-150		
Surrogate: Fluoranthene-d10	0.0277		"	0.0333		83.0	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0169 - EPA 3050B

Blank (BGC0169-BLK1)

Prepared: 03/06/23 Analyzed: 03/09/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGC0169-BS1)

Prepared: 03/06/23 Analyzed: 03/09/23

Arsenic	39.3	0.200	mg/kg wet	40.0	98.2	80-120
Barium	40.5	0.400	"	40.0	101	80-120
Selenium	4.06	0.260	"	4.00	101	80-120

Duplicate (BGC0169-DUP1)

Source: 2301475-01

Prepared: 03/06/23 Analyzed: 03/09/23

Arsenic	0.661	0.200	mg/kg dry	0.459	36.0	20	QR-04
Barium	23.3	0.400	"	26.5	12.6	20	
Selenium	ND	0.260	"	ND		20	

Matrix Spike (BGC0169-MS1)

Source: 2301475-01

Prepared: 03/06/23 Analyzed: 03/09/23

Arsenic	46.7	0.200	mg/kg dry	45.9	0.459	101	75-125
Barium	65.2	0.400	"	45.9	26.5	84.4	75-125
Selenium	4.74	0.260	"	4.59	ND	103	75-125

Matrix Spike Dup (BGC0169-MSD1)

Source: 2301475-01

Prepared: 03/06/23 Analyzed: 03/09/23

Arsenic	47.0	0.200	mg/kg dry	45.9	0.459	101	75-125	0.533	25
Barium	74.1	0.400	"	45.9	26.5	104	75-125	12.7	25
Selenium	4.57	0.260	"	4.59	ND	99.4	75-125	3.74	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0178 - General Preparation

Duplicate (BGC0178-DUP1)

Source: 2303124-01

Prepared: 03/07/23 Analyzed: 03/08/23

% Solids	93.4	%	92.2	1.35	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/10/23 16:55

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0181 - General Preparation

LCS (BGC0181-BS1)

Prepared & Analyzed: 03/07/23

pH	9.09	pH Units	9.18	99.0	95-105
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Duplicate (BGC0181-DUP1)

Source: 2303126-01

Prepared & Analyzed: 03/07/23

pH	6.72	pH Units	6.49	3.48	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/10/23 16:55

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 13, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2303155

Enclosed are the results of analyses for samples received by Summit Scientific on 03/07/23 17:36. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS190@12'	2303155-01	Soil	03/07/23 12:20	03/07/23 17:36
SS191@12'	2303155-02	Soil	03/07/23 15:08	03/07/23 17:36




Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Werning 3,4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix			Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAHs	Metals		
1	SSI90e12'	3/7/23	1220	2			X			X			X	X	X		X	X	X		
2	SSI91e12'	↓	1508	↓			↓			↓			↓	↓	↓		↓	↓	↓		
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 3/7/23 1615	Received by: Tasman Lockbox	Date/Time: 3/7/23 1615	TAT Business Days	Field DO	Notes: * = pH only * = PAHs = Chrysene, Pyrene, Fluorene, 1-m, 2-m. * = Metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman Lockbox	Date/Time: 3/7/23 1734	Received by: 	Date/Time: 3/7/23 1734	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day <input checked="" type="checkbox"/>	Field ORP	
				2 Days <input type="checkbox"/>	Field pH	
				3 Days <input type="checkbox"/>	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard <input checked="" type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: 7.6	Corrected Temperature: 	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2303155Client: ReismanClient Project ID: werning 34-2 TamirakShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐Airbill #: ☐
☐ ☐ ☐ ☐ ☐

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☐

Other

☐

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	once
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.
AS
Custodian Printed Name

3/7/23
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

SS190@12'
2303155-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/07/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0204	03/07/23	03/08/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/07/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		113 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/07/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0205	03/07/23	03/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/07/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		129 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

SS190@12'
2303155-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/07/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0210	03/08/23	03/09/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/07/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		69.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/07/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.247	0.200		mg/kg dry	1	BGC0232	03/08/23	03/13/23	EPA 6020B	
Barium	5.15	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **03/07/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	25.3	0.0564		mg/L dry	1	BGC0203	03/07/23	03/10/23	EPA 6020B	
Magnesium	10.1	0.0564		"	"	"	"	"	"	
Sodium	33.5	0.0564		"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

SS190@12'
2303155-01 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **03/07/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.42	0.00100		units	1	BGC0296	03/10/23	03/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/07/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6			%	1	BGC0233	03/08/23	03/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/07/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.24			pH Units	1	BGC0227	03/08/23	03/08/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

SS191@12'
2303155-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/07/23 15:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0204	03/07/23	03/08/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/07/23 15:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		117 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/07/23 15:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0205	03/07/23	03/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/07/23 15:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		128 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

SS191@12'
2303155-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/07/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0210	03/08/23	03/09/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/07/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		95.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/07/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.273	0.200		mg/kg dry	1	BGC0232	03/08/23	03/13/23	EPA 6020B	
Barium	7.14	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **03/07/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	37.7	0.0602		mg/L dry	1	BGC0203	03/07/23	03/10/23	EPA 6020B	
Magnesium	15.3	0.0602		"	"	"	"	"	"	
Sodium	48.5	0.0602		"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

SS191@12'
2303155-02 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **03/07/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.68	0.00100		units	1	BGC0296	03/10/23	03/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/07/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.0			%	1	BGC0233	03/08/23	03/09/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/07/23 15:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.54			pH Units	1	BGC0227	03/08/23	03/08/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGC0204 - EPA 5030 Soil MS

Blank (BGC0204-BLK1)

Prepared: 03/07/23 Analyzed: 03/08/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0483		"	0.0400		121	50-150			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	50-150			

Blank (BGC0204-BLK2)

Prepared: 03/07/23 Analyzed: 03/08/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0436		"	0.0400		109	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

LCS (BGC0204-BS1)

Prepared: 03/07/23 Analyzed: 03/08/23

Benzene	0.0882	0.0020	mg/kg	0.100		88.2	70-130			
Toluene	0.0769	0.0050	"	0.100		76.9	70-130			
Ethylbenzene	0.0884	0.0050	"	0.100		88.4	70-130			
m,p-Xylene	0.177	0.010	"	0.200		88.5	70-130			
o-Xylene	0.0824	0.0050	"	0.100		82.4	70-130			
1,2,4-Trimethylbenzene	0.0796	0.0050	"	0.100		79.6	70-130			
1,3,5-Trimethylbenzene	0.0832	0.0050	"	0.100		83.2	70-130			
Naphthalene	0.0997	0.0038	"	0.100		99.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0432		"	0.0400		108	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		101	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0204 - EPA 5030 Soil MS

LCS (BGC0204-BS2)

Prepared: 03/07/23 Analyzed: 03/08/23

Benzene	0.0864	0.0020	mg/kg	0.100		86.4	70-130			
Toluene	0.0778	0.0050	"	0.100		77.8	70-130			
Ethylbenzene	0.0956	0.0050	"	0.100		95.6	70-130			
m,p-Xylene	0.190	0.010	"	0.200		95.0	70-130			
o-Xylene	0.0898	0.0050	"	0.100		89.8	70-130			
1,2,4-Trimethylbenzene	0.0880	0.0050	"	0.100		88.0	70-130			
1,3,5-Trimethylbenzene	0.0909	0.0050	"	0.100		90.9	70-130			
Naphthalene	0.102	0.0038	"	0.100		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0385		"	0.0400		96.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0422		"	0.0400		106	50-150			

Matrix Spike (BGC0204-MS1)

Source: 2303149-01

Prepared: 03/07/23 Analyzed: 03/08/23

Benzene	0.0832	0.0020	mg/kg	0.100	ND	83.2	70-130			
Toluene	0.0741	0.0050	"	0.100	ND	74.1	70-130			
Ethylbenzene	0.0924	0.0050	"	0.100	ND	92.4	70-130			
m,p-Xylene	0.183	0.010	"	0.200	ND	91.4	70-130			
o-Xylene	0.0866	0.0050	"	0.100	ND	86.6	70-130			
1,2,4-Trimethylbenzene	0.0849	0.0050	"	0.100	ND	84.9	70-130			
1,3,5-Trimethylbenzene	0.0874	0.0050	"	0.100	ND	87.4	70-130			
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	50-150			

Matrix Spike (BGC0204-MS2)

Source: 2303149-02

Prepared: 03/07/23 Analyzed: 03/08/23

Benzene	0.0841	0.0020	mg/kg	0.100	ND	84.1	70-130			
Toluene	0.0760	0.0050	"	0.100	ND	76.0	70-130			
Ethylbenzene	0.0928	0.0050	"	0.100	ND	92.8	70-130			
m,p-Xylene	0.184	0.010	"	0.200	ND	91.8	70-130			
o-Xylene	0.0856	0.0050	"	0.100	ND	85.6	70-130			
1,2,4-Trimethylbenzene	0.0851	0.0050	"	0.100	ND	85.1	70-130			
1,3,5-Trimethylbenzene	0.0868	0.0050	"	0.100	ND	86.8	70-130			
Naphthalene	0.102	0.0038	"	0.100	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0204 - EPA 5030 Soil MS

Matrix Spike Dup (BGC0204-MSD1)

Source: 2303149-01

Prepared: 03/07/23 Analyzed: 03/08/23

Benzene	0.0875	0.0020	mg/kg	0.100	ND	87.5	70-130	5.10	30	
Toluene	0.0805	0.0050	"	0.100	ND	80.5	70-130	8.31	30	
Ethylbenzene	0.0927	0.0050	"	0.100	ND	92.7	70-130	0.324	30	
m,p-Xylene	0.186	0.010	"	0.200	ND	92.9	70-130	1.64	30	
o-Xylene	0.0881	0.0050	"	0.100	ND	88.1	70-130	1.72	30	
1,2,4-Trimethylbenzene	0.0865	0.0050	"	0.100	ND	86.5	70-130	1.85	30	
1,3,5-Trimethylbenzene	0.0890	0.0050	"	0.100	ND	89.0	70-130	1.73	30	
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130	2.98	30	
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	50-150			

Matrix Spike Dup (BGC0204-MSD2)

Source: 2303149-02

Prepared: 03/07/23 Analyzed: 03/08/23

Benzene	0.0875	0.0020	mg/kg	0.100	ND	87.5	70-130	3.98	30	
Toluene	0.0800	0.0050	"	0.100	ND	80.0	70-130	5.04	30	
Ethylbenzene	0.0928	0.0050	"	0.100	ND	92.8	70-130	0.00	30	
m,p-Xylene	0.186	0.010	"	0.200	ND	93.1	70-130	1.44	30	
o-Xylene	0.0896	0.0050	"	0.100	ND	89.6	70-130	4.49	30	
1,2,4-Trimethylbenzene	0.0873	0.0050	"	0.100	ND	87.3	70-130	2.47	30	
1,3,5-Trimethylbenzene	0.0883	0.0050	"	0.100	ND	88.3	70-130	1.68	30	
Naphthalene	0.111	0.0038	"	0.100	ND	111	70-130	7.80	30	
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0389		"	0.0400		97.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400		105	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0205 - EPA 3550A

Blank (BGC0205-BLK1)

Prepared: 03/07/23 Analyzed: 03/08/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	8.52		"	12.5		68.2	30-150			

Blank (BGC0205-BLK2)

Prepared: 03/07/23 Analyzed: 03/08/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	8.27		"	12.5		66.2	30-150			

LCS (BGC0205-BS1)

Prepared: 03/07/23 Analyzed: 03/08/23

C10-C28 (DRO)	434	50	mg/kg	500		86.7	70-130			
Surrogate: o-Terphenyl	8.59		"	12.5		68.7	30-150			

LCS (BGC0205-BS2)

Prepared: 03/07/23 Analyzed: 03/08/23

C10-C28 (DRO)	446	50	mg/kg	500		89.1	70-130			
Surrogate: o-Terphenyl	9.01		"	12.5		72.1	30-150			

Matrix Spike (BGC0205-MS1)

Source: 2303149-01

Prepared: 03/07/23 Analyzed: 03/08/23

C10-C28 (DRO)	435	50	mg/kg	500	ND	86.9	70-130			
Surrogate: o-Terphenyl	7.98		"	12.5		63.9	30-150			

Matrix Spike (BGC0205-MS2)

Source: 2303149-02

Prepared: 03/07/23 Analyzed: 03/08/23

C10-C28 (DRO)	413	50	mg/kg	500	26.2	77.4	70-130			
Surrogate: o-Terphenyl	7.97		"	12.5		63.8	30-150			

Matrix Spike Dup (BGC0205-MSD1)

Source: 2303149-01

Prepared: 03/07/23 Analyzed: 03/08/23

C10-C28 (DRO)	428	50	mg/kg	500	ND	85.6	70-130	1.51	20	
Surrogate: o-Terphenyl	10.0		"	12.5		80.4	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0205 - EPA 3550A

Matrix Spike Dup (BGC0205-MSD2)


Source: 2303149-02

Prepared: 03/07/23 Analyzed: 03/08/23

C10-C28 (DRO)	403	50	mg/kg	500	26.2	75.4	70-130	2.44	20	
Surrogate: o-Terphenyl	7.85		"	12.5		62.8	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0210 - EPA 5030 Soil MS

Blank (BGC0210-BLK1)

Prepared & Analyzed: 03/08/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0329		"	0.0333		98.8	40-150			
Surrogate: Fluoranthene-d10	0.0295		"	0.0333		88.6	40-150			

LCS (BGC0210-BS1)

Prepared & Analyzed: 03/08/23

Acenaphthene	0.0373	0.00500	mg/kg	0.0333	112	31-137
Anthracene	0.0318	0.00500	"	0.0333	95.5	30-120
Benzo (a) anthracene	0.0260	0.00500	"	0.0333	78.1	30-120
Benzo (a) pyrene	0.0318	0.00500	"	0.0333	95.4	30-120
Benzo (b) fluoranthene	0.0309	0.00500	"	0.0333	92.8	30-120
Benzo (k) fluoranthene	0.0392	0.00500	"	0.0333	118	30-120
Chrysene	0.0277	0.00500	"	0.0333	83.0	30-120
Dibenz (a,h) anthracene	0.0287	0.00500	"	0.0333	86.0	30-120
Fluoranthene	0.0351	0.00500	"	0.0333	105	30-120
Fluorene	0.0359	0.00500	"	0.0333	108	30-120
Indeno (1,2,3-cd) pyrene	0.0334	0.00500	"	0.0333	100	30-120
Pyrene	0.0307	0.00500	"	0.0333	92.2	35-142
1-Methylnaphthalene	0.0282	0.00500	"	0.0333	84.5	35-142
2-Methylnaphthalene	0.0281	0.00500	"	0.0333	84.2	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0318		"	0.0333	95.3	40-150
Surrogate: Fluoranthene-d10	0.0381		"	0.0333	114	40-150

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0210 - EPA 5030 Soil MS

Matrix Spike (BGC0210-MS1)

Source: 2303151-01

Prepared & Analyzed: 03/08/23

Acenaphthene	0.0148	0.00500	mg/kg	0.0333	ND	44.3	31-137		
Anthracene	0.0138	0.00500	"	0.0333	ND	41.5	30-120		
Benzo (a) anthracene	0.0176	0.00500	"	0.0333	ND	52.9	30-120		
Benzo (a) pyrene	0.0154	0.00500	"	0.0333	ND	46.1	30-120		
Benzo (b) fluoranthene	0.0158	0.00500	"	0.0333	ND	47.3	30-120		
Benzo (k) fluoranthene	0.0158	0.00500	"	0.0333	ND	47.5	30-120		
Chrysene	0.0143	0.00500	"	0.0333	ND	42.9	30-120		
Dibenz (a,h) anthracene	0.0155	0.00500	"	0.0333	ND	46.5	30-120		
Fluoranthene	0.0149	0.00500	"	0.0333	ND	44.6	30-120		
Fluorene	0.0141	0.00500	"	0.0333	ND	42.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0141	0.00500	"	0.0333	ND	42.2	30-120		
Pyrene	0.0143	0.00500	"	0.0333	ND	42.9	35-142		
1-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	45.9	15-130		
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.5	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0157		"	0.0333		47.1	40-150		
Surrogate: Fluoranthene-d10	0.0156		"	0.0333		46.8	40-150		

Matrix Spike Dup (BGC0210-MSD1)

Source: 2303151-01

Prepared & Analyzed: 03/08/23

Acenaphthene	0.0173	0.00500	mg/kg	0.0333	ND	52.0	31-137	16.0	30	
Anthracene	0.0150	0.00500	"	0.0333	ND	44.9	30-120	7.96	30	
Benzo (a) anthracene	0.0147	0.00500	"	0.0333	ND	44.2	30-120	17.9	30	
Benzo (a) pyrene	0.0161	0.00500	"	0.0333	ND	48.2	30-120	4.52	30	
Benzo (b) fluoranthene	0.0136	0.00500	"	0.0333	ND	40.8	30-120	14.7	30	
Benzo (k) fluoranthene	0.0137	0.00500	"	0.0333	ND	41.1	30-120	14.4	30	
Chrysene	0.0138	0.00500	"	0.0333	ND	41.3	30-120	3.72	30	
Dibenz (a,h) anthracene	0.0136	0.00500	"	0.0333	ND	40.9	30-120	12.8	30	
Fluoranthene	0.0134	0.00500	"	0.0333	ND	40.2	30-120	10.2	30	
Fluorene	0.0162	0.00500	"	0.0333	ND	48.6	30-120	13.8	30	
Indeno (1,2,3-cd) pyrene	0.0193	0.00500	"	0.0333	ND	57.8	30-120	31.2	30	QR-02
Pyrene	0.0148	0.00500	"	0.0333	ND	44.4	35-142	3.44	30	
1-Methylnaphthalene	0.0147	0.00500	"	0.0333	ND	44.2	15-130	3.87	50	
2-Methylnaphthalene	0.0174	0.00500	"	0.0333	ND	52.1	15-130	3.20	50	
Surrogate: 2-Methylnaphthalene-d10	0.0137		"	0.0333		41.0	40-150			
Surrogate: Fluoranthene-d10	0.0150		"	0.0333		44.9	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0232 - EPA 3050B

Blank (BGC0232-BLK1)

Prepared: 03/08/23 Analyzed: 03/13/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGC0232-BS1)

Prepared: 03/08/23 Analyzed: 03/13/23

Arsenic	37.9	0.200	mg/kg wet	40.0	94.8	80-120
Barium	37.9	0.400	"	40.0	94.8	80-120
Selenium	3.58	0.260	"	4.00	89.5	80-120

Duplicate (BGC0232-DUP1)

Source: 2303149-01

Prepared: 03/08/23 Analyzed: 03/13/23

Arsenic	0.585	0.200	mg/kg dry	0.833	35.0	20	QR-04
Barium	28.2	0.400	"	41.8	39.0	20	QR-04
Selenium	ND	0.260	"	ND		20	

Matrix Spike (BGC0232-MS1)

Source: 2303149-01

Prepared: 03/08/23 Analyzed: 03/13/23

Arsenic	47.9	0.200	mg/kg dry	50.2	0.833	93.8	75-125
Barium	81.3	0.400	"	50.2	41.8	78.7	75-125
Selenium	4.37	0.260	"	5.02	ND	87.0	75-125

Matrix Spike Dup (BGC0232-MSD1)

Source: 2303149-01

Prepared: 03/08/23 Analyzed: 03/13/23

Arsenic	48.5	0.200	mg/kg dry	50.2	0.833	95.0	75-125	1.30	25
Barium	95.1	0.400	"	50.2	41.8	106	75-125	15.6	25
Selenium	4.16	0.260	"	5.02	ND	82.9	75-125	4.74	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0203 - General Preparation

Blank (BGC0203-BLK1)

Prepared: 03/07/23 Analyzed: 03/09/23

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BGC0203-BS1)

Prepared: 03/07/23 Analyzed: 03/09/23

Calcium	4.97	0.0500	mg/L wet	5.00	99.5	70-130
Magnesium	5.01	0.0500	"	5.00	100	70-130
Sodium	4.94	0.0500	"	5.00	98.7	70-130

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0233 - General Preparation

Duplicate (BGC0233-DUP1)

Source: 2303149-01

Prepared: 03/08/23 Analyzed: 03/09/23

% Solids	79.8	%	79.7	0.184	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/13/23 14:58

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0227 - General Preparation

LCS (BGC0227-BS1)

Prepared & Analyzed: 03/08/23

pH	9.23	pH Units	9.18	101	95-105
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Duplicate (BGC0227-DUP1)

Source: 2303155-01

Prepared & Analyzed: 03/08/23

pH	7.33	pH Units	7.24	1.24	20
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Summit Scientific

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PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/13/23 14:58

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 14, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2303184

Enclosed are the results of analyses for samples received by Summit Scientific on 03/08/23 17:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

ANALYTICAL REPORT FOR SAMPLES

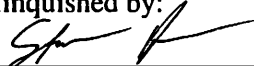


Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS192@12'	2303184-01	Soil	03/08/23 08:54	03/08/23 17:40
SS193@10'	2303184-02	Soil	03/08/23 10:09	03/08/23 17:40

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Warning 3, 4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ✓	PAHs ✓	Metals ✓			
1	SS192 e12'	3/8/23	854	2			X			X			X	X	X		X	X	X			
2	SS193 e10'	↓	1009	↓			↓			↓			↓	↓	↓		↓	↓	↓			
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by: 	Date/Time: 3/9/23 1559	Received by: Tasman Lockbox	Date/Time: 3/8/23 1559	TAT Business Days	Field DO	Notes: X = pH only X = PAH's = Chrysene, Pyrene, Fluorene, 1-m, 2-m X = metals = Arsenic, Barium, Selenium.
Relinquished by: tasmanlockbox	Date/Time: 3823 1740	Received by: 	Date/Time: 3823 1740	Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 8.0	Corrected Temperature: 	IR gun #: 1	HNO3 lot #:	Standard	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2303184Client: Potomac Client Project ID: Werning 34-2 Tank Battery
Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐☐ ☐ ☐ ☐ ☐Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 8.0Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ICE</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

AS
Custodian Printed Name

3/8/23
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

SS192@12'
2303184-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/08/23 08:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0243	03/08/23	03/08/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/08/23 08:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		66.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		82.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		82.1 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/08/23 08:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0244	03/08/23	03/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/08/23 08:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		78.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

SS192@12'
2303184-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/08/23 08:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0251	03/09/23	03/10/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/08/23 08:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		93.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/08/23 08:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.328	0.200		mg/kg dry	1	BGC0249	03/08/23	03/13/23	EPA 6020B	
Barium	7.99	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/08/23 08:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.2			%	1	BGC0268	03/09/23	03/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/08/23 08:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/14/23 13:49

SS192@12'
2303184-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	6.85	pH Units	1	BGC0260	03/09/23	03/09/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

SS193@10'
2303184-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/08/23 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0243	03/08/23	03/08/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/08/23 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		66.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		82.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/08/23 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0244	03/08/23	03/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/08/23 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		101 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

SS193@10'
2303184-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/08/23 10:09**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0251	03/09/23	03/10/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/08/23 10:09**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		86.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/08/23 10:09**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.392	0.200		mg/kg dry	1	BGC0249	03/08/23	03/13/23	EPA 6020B	
Barium	17.5	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/08/23 10:09**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5			%	1	BGC0268	03/09/23	03/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/08/23 10:09**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/14/23 13:49

SS193@10'
2303184-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.49	pH Units	1	BGC0260	03/09/23	03/09/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0243 - EPA 5030 Soil MS

Blank (BGC0243-BLK1)

Prepared & Analyzed: 03/08/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0447		"	0.0400		112	50-150			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

LCS (BGC0243-BS1)

Prepared & Analyzed: 03/08/23

Benzene	0.0898	0.0020	mg/kg	0.100		89.8	70-130			
Toluene	0.0805	0.0050	"	0.100		80.5	70-130			
Ethylbenzene	0.0917	0.0050	"	0.100		91.7	70-130			
m,p-Xylene	0.185	0.010	"	0.200		92.4	70-130			
o-Xylene	0.0877	0.0050	"	0.100		87.7	70-130			
1,2,4-Trimethylbenzene	0.0844	0.0050	"	0.100		84.4	70-130			
1,3,5-Trimethylbenzene	0.0878	0.0050	"	0.100		87.8	70-130			
Naphthalene	0.0721	0.0038	"	0.100		72.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0401		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	50-150			

Matrix Spike (BGC0243-MS1)

Source: 2303173-01

Prepared & Analyzed: 03/08/23

Benzene	0.0899	0.0020	mg/kg	0.100	ND	89.9	70-130			
Toluene	0.0823	0.0050	"	0.100	ND	82.3	70-130			
Ethylbenzene	0.0964	0.0050	"	0.100	ND	96.4	70-130			
m,p-Xylene	0.193	0.010	"	0.200	ND	96.3	70-130			
o-Xylene	0.0890	0.0050	"	0.100	ND	89.0	70-130			
1,2,4-Trimethylbenzene	0.0904	0.0050	"	0.100	ND	90.4	70-130			
1,3,5-Trimethylbenzene	0.0917	0.0050	"	0.100	ND	91.7	70-130			
Naphthalene	0.0752	0.0038	"	0.100	ND	75.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0379		"	0.0400		94.8	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0243 - EPA 5030 Soil MS

Matrix Spike Dup (BGC0243-MSD1)	Source: 2303173-01			Prepared & Analyzed: 03/08/23						
Benzene	0.0857	0.0020	mg/kg	0.100	ND	85.7	70-130	4.78	30	
Toluene	0.0772	0.0050	"	0.100	ND	77.2	70-130	6.36	30	
Ethylbenzene	0.0913	0.0050	"	0.100	ND	91.3	70-130	5.46	30	
m,p-Xylene	0.180	0.010	"	0.200	ND	90.2	70-130	6.52	30	
o-Xylene	0.0846	0.0050	"	0.100	ND	84.6	70-130	5.08	30	
1,2,4-Trimethylbenzene	0.0848	0.0050	"	0.100	ND	84.8	70-130	6.47	30	
1,3,5-Trimethylbenzene	0.0863	0.0050	"	0.100	ND	86.3	70-130	6.03	30	
Naphthalene	0.0751	0.0038	"	0.100	ND	75.1	70-130	0.0799	30	
Surrogate: 1,2-Dichloroethane-d4	0.0418		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0389		"	0.0400		97.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0244 - EPA 3550A

Blank (BGC0244-BLK1)

Prepared & Analyzed: 03/08/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.9		"	12.5	119	30-150				

LCS (BGC0244-BS1)

Prepared & Analyzed: 03/08/23

C10-C28 (DRO)	482	50	mg/kg	500	96.5	70-130				
Surrogate: o-Terphenyl	15.3		"	12.5	122	30-150				

Matrix Spike (BGC0244-MS1)

Source: 2303173-01

Prepared & Analyzed: 03/08/23

C10-C28 (DRO)	490	50	mg/kg	500	12.6	95.5	70-130			
Surrogate: o-Terphenyl	11.4		"	12.5	91.2	30-150				

Matrix Spike Dup (BGC0244-MSD1)

Source: 2303173-01

Prepared & Analyzed: 03/08/23

C10-C28 (DRO)	448	50	mg/kg	500	12.6	87.1	70-130	8.97	20	
Surrogate: o-Terphenyl	13.4		"	12.5	107	30-150				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Reporting				Spike	Source	%REC			RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0251 - EPA 5030 Soil MS

Blank (BGC0251-BLK1)

Prepared & Analyzed: 03/09/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0316		"	0.0333		94.7	40-150			
Surrogate: Fluoranthene-d10	0.0305		"	0.0333		91.4	40-150			

LCS (BGC0251-BS1)

Prepared & Analyzed: 03/09/23

Acenaphthene	0.0345	0.00500	mg/kg	0.0333	104	31-137
Anthracene	0.0344	0.00500	"	0.0333	103	30-120
Benzo (a) anthracene	0.0280	0.00500	"	0.0333	83.9	30-120
Benzo (a) pyrene	0.0241	0.00500	"	0.0333	72.2	30-120
Benzo (b) fluoranthene	0.0254	0.00500	"	0.0333	76.3	30-120
Benzo (k) fluoranthene	0.0331	0.00500	"	0.0333	99.4	30-120
Chrysene	0.0300	0.00500	"	0.0333	89.9	30-120
Dibenz (a,h) anthracene	0.0328	0.00500	"	0.0333	98.3	30-120
Fluoranthene	0.0343	0.00500	"	0.0333	103	30-120
Fluorene	0.0388	0.00500	"	0.0333	116	30-120
Indeno (1,2,3-cd) pyrene	0.0260	0.00500	"	0.0333	77.9	30-120
Pyrene	0.0319	0.00500	"	0.0333	95.8	35-142
1-Methylnaphthalene	0.0327	0.00500	"	0.0333	98.0	35-142
2-Methylnaphthalene	0.0330	0.00500	"	0.0333	99.0	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0364		"	0.0333	109	40-150
Surrogate: Fluoranthene-d10	0.0393		"	0.0333	118	40-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0251 - EPA 5030 Soil MS

Matrix Spike (BGC0251-MS1)

Source: 2303134-01

Prepared & Analyzed: 03/09/23

Acenaphthene	0.0134	0.00500	mg/kg	0.0333	ND	40.3	31-137		
Anthracene	0.0209	0.00500	"	0.0333	ND	62.8	30-120		
Benzo (a) anthracene	0.0179	0.00500	"	0.0333	ND	53.8	30-120		
Benzo (a) pyrene	0.0203	0.00500	"	0.0333	ND	60.8	30-120		
Benzo (b) fluoranthene	0.0138	0.00500	"	0.0333	ND	41.3	30-120		
Benzo (k) fluoranthene	0.0152	0.00500	"	0.0333	ND	45.5	30-120		
Chrysene	0.0162	0.00500	"	0.0333	ND	48.5	30-120		
Dibenz (a,h) anthracene	0.0163	0.00500	"	0.0333	ND	48.9	30-120		
Fluoranthene	0.0194	0.00500	"	0.0333	ND	58.3	30-120		
Fluorene	0.0241	0.00500	"	0.0333	ND	72.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0160	0.00500	"	0.0333	ND	48.1	30-120		
Pyrene	0.0208	0.00500	"	0.0333	0.00196	56.6	35-142		
1-Methylnaphthalene	0.0371	0.00500	"	0.0333	0.00856	85.7	15-130		
2-Methylnaphthalene	0.0398	0.00500	"	0.0333	0.00968	90.5	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0263		"	0.0333		78.9	40-150		
Surrogate: Fluoranthene-d10	0.0194		"	0.0333		58.3	40-150		

Matrix Spike Dup (BGC0251-MSD1)

Source: 2303134-01

Prepared & Analyzed: 03/09/23

Acenaphthene	0.0175	0.00500	mg/kg	0.0333	ND	52.5	31-137	26.4	30
Anthracene	0.0169	0.00500	"	0.0333	ND	50.8	30-120	21.2	30
Benzo (a) anthracene	0.0138	0.00500	"	0.0333	ND	41.5	30-120	25.7	30
Benzo (a) pyrene	0.0166	0.00500	"	0.0333	ND	49.7	30-120	20.0	30
Benzo (b) fluoranthene	0.0168	0.00500	"	0.0333	ND	50.5	30-120	20.0	30
Benzo (k) fluoranthene	0.0145	0.00500	"	0.0333	ND	43.4	30-120	4.84	30
Chrysene	0.0144	0.00500	"	0.0333	ND	43.1	30-120	11.8	30
Dibenz (a,h) anthracene	0.0185	0.00500	"	0.0333	ND	55.6	30-120	12.8	30
Fluoranthene	0.0156	0.00500	"	0.0333	ND	46.9	30-120	21.6	30
Fluorene	0.0211	0.00500	"	0.0333	ND	63.3	30-120	13.3	30
Indeno (1,2,3-cd) pyrene	0.0151	0.00500	"	0.0333	ND	45.4	30-120	5.88	30
Pyrene	0.0156	0.00500	"	0.0333	0.00196	41.0	35-142	28.5	30
1-Methylnaphthalene	0.0254	0.00500	"	0.0333	0.00856	50.4	15-130	37.6	50
2-Methylnaphthalene	0.0306	0.00500	"	0.0333	0.00968	62.7	15-130	26.4	50
Surrogate: 2-Methylnaphthalene-d10	0.0208		"	0.0333		62.3	40-150		
Surrogate: Fluoranthene-d10	0.0159		"	0.0333		47.8	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0249 - EPA 3050B

Blank (BGC0249-BLK1)

Prepared: 03/08/23 Analyzed: 03/13/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGC0249-BS1)

Prepared: 03/08/23 Analyzed: 03/13/23

Arsenic	40.6	0.200	mg/kg wet	40.0	101	80-120
Barium	40.5	0.400	"	40.0	101	80-120
Selenium	4.44	0.260	"	4.00	111	80-120

Duplicate (BGC0249-DUP1)

Source: 2303170-01

Prepared: 03/08/23 Analyzed: 03/13/23

Arsenic	3.86	0.200	mg/kg dry	4.05	4.70	20
Barium	112	0.400	"	117	4.37	20
Selenium	0.336	0.260	"	0.280	18.3	20

Matrix Spike (BGC0249-MS1)

Source: 2303170-01

Prepared: 03/08/23 Analyzed: 03/13/23

Arsenic	54.1	0.200	mg/kg dry	49.8	4.05	101	75-125
Barium	160	0.400	"	49.8	117	84.7	75-125
Selenium	5.17	0.260	"	4.98	0.280	98.1	75-125

Matrix Spike Dup (BGC0249-MSD1)

Source: 2303170-01

Prepared: 03/08/23 Analyzed: 03/13/23

Arsenic	53.6	0.200	mg/kg dry	49.8	4.05	99.5	75-125	0.929	25
Barium	157	0.400	"	49.8	117	79.5	75-125	1.63	25
Selenium	5.18	0.260	"	4.98	0.280	98.3	75-125	0.164	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0268 - General Preparation

Duplicate (BGC0268-DUP1)

Source: 2303179-01

Prepared: 03/09/23 Analyzed: 03/10/23

% Solids	96.5	%	96.2	0.300	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/14/23 13:49

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0260 - General Preparation

LCS (BGC0260-BS1)

Prepared & Analyzed: 03/09/23

pH	9.07	pH Units	9.18	98.8	95-105
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Duplicate (BGC0260-DUP1)

Source: 2303184-01

Prepared & Analyzed: 03/09/23

pH	6.87	pH Units	6.85	0.292	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/14/23 13:49

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 14, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2303221

Enclosed are the results of analyses for samples received by Summit Scientific on 03/09/23 18:06. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS194@10'	2303221-01	Soil	03/09/23 09:01	03/09/23 18:06
SS195@12'	2303221-02	Soil	03/09/23 10:12	03/09/23 18:06
SS196@12'	2303221-03	Soil	03/09/23 15:14	03/09/23 18:06

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Warning 3,4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S.A. [Signature]		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested							Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ✕	PAHs ✕	Metals ✕		
1	SS194 c 10'	3/9/23	901	2			X			X			X	X	X		X	X	X		
2	SS195 c 12'	↓	1012	↓			↓			↓			↓	↓	↓		↓	↓	↓		
3	SS196 c 12'	↓	1514	↓			↓			↓			↓	↓	↓		↓	↓	↓		
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: [Signature]	Date/Time: 3/9/23 1633	Received by: Tasman Lockbox	Date/Time: 3/9/23 1633	TAT Business Days	Field DO	Notes: * = pH only * = PAH's = Chrysene, Pyrene, Fluorene, 1-m, 2-m. * = metals = Arsenic, Barium, Selenium.
Relinquished by: Tasman Lockbox	Date/Time: 3/9/23 1800	Received by: [Signature]	Date/Time: 3/9/23 1800	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 16 CO	Corrected Temperature: 16	IR gun #: 1	HNO3 lot #:	Standard	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2303221Client: PPC / TasmannClient Project ID: Werring 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☐

Other

☐

Temp (°C)

8.6

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ice</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>Additional Comments (if any):</u>				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Custodian Printed Name

Date/Time

3/9/23 1806



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

SS194@10'
2303221-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/09/23 09:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0284	03/09/23	03/09/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/09/23 09:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		100 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/09/23 09:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0285	03/09/23	03/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/09/23 09:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		111 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

SS194@10'
2303221-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/09/23 09:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0287	03/10/23	03/10/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/09/23 09:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		47.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		69.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/09/23 09:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.280	0.200		mg/kg dry	1	BGC0282	03/09/23	03/13/23	EPA 6020B	
Barium	11.7	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/09/23 09:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.7			%	1	BGC0308	03/10/23	03/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/09/23 09:01**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

SS194@10'
2303221-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.68	pH Units	1	BGC0326	03/12/23	03/13/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

SS195@12'
2303221-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/09/23 10:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0284	03/09/23	03/09/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/09/23 10:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/09/23 10:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0285	03/09/23	03/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/09/23 10:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		114 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

SS195@12'
2303221-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/09/23 10:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0287	03/10/23	03/10/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/09/23 10:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		47.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/09/23 10:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.419	0.200		mg/kg dry	1	BGC0282	03/09/23	03/14/23	EPA 6020B	
Barium	38.0	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/09/23 10:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.3			%	1	BGC0308	03/10/23	03/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/09/23 10:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/14/23 14:24

SS195@12'
2303221-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.40	pH Units	1	BGC0326	03/12/23	03/13/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

SS196@12'
2303221-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/09/23 15:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0284	03/09/23	03/09/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/09/23 15:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/09/23 15:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0285	03/09/23	03/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/09/23 15:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		108 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

SS196@12'
2303221-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/09/23 15:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0287	03/10/23	03/10/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/09/23 15:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		52.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		79.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/09/23 15:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.296	0.200		mg/kg dry	1	BGC0282	03/09/23	03/14/23	EPA 6020B	
Barium	4.70	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/09/23 15:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.6			%	1	BGC0308	03/10/23	03/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/09/23 15:14**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/14/23 14:24

SS196@12'
2303221-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.42	pH Units	1	BGC0326	03/12/23	03/13/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0284 - EPA 5030 Soil MS

Blank (BGC0284-BLK1)

Prepared: 03/09/23 Analyzed: 03/10/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0466		"	0.0400	116	50-150				
Surrogate: Toluene-d8	0.0391		"	0.0400	97.6	50-150				
Surrogate: 4-Bromofluorobenzene	0.0419		"	0.0400	105	50-150				

Blank (BGC0284-BLK2)

Prepared: 03/09/23 Analyzed: 03/10/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0269		"	0.0400	67.3	50-150				
Surrogate: Toluene-d8	0.0337		"	0.0400	84.3	50-150				
Surrogate: 4-Bromofluorobenzene	0.0338		"	0.0400	84.6	50-150				

LCS (BGC0284-BS1)

Prepared: 03/09/23 Analyzed: 03/10/23

Benzene	0.124	0.0020	mg/kg	0.100	124	70-130				
Toluene	0.127	0.0050	"	0.100	127	70-130				
Ethylbenzene	0.127	0.0050	"	0.100	127	70-130				
m,p-Xylene	0.252	0.010	"	0.200	126	70-130				
o-Xylene	0.117	0.0050	"	0.100	117	70-130				
1,2,4-Trimethylbenzene	0.121	0.0050	"	0.100	121	70-130				
1,3,5-Trimethylbenzene	0.122	0.0050	"	0.100	122	70-130				
Naphthalene	0.0832	0.0038	"	0.100	83.2	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0463		"	0.0400	116	50-150				
Surrogate: Toluene-d8	0.0395		"	0.0400	98.7	50-150				
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400	102	50-150				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0284 - EPA 5030 Soil MS

LCS (BGC0284-BS2)

Prepared: 03/09/23 Analyzed: 03/10/23

Benzene	0.102	0.0020	mg/kg	0.100		102	70-130
Toluene	0.100	0.0050	"	0.100		100	70-130
Ethylbenzene	0.105	0.0050	"	0.100		105	70-130
m,p-Xylene	0.224	0.010	"	0.200		112	70-130
o-Xylene	0.106	0.0050	"	0.100		106	70-130
1,2,4-Trimethylbenzene	0.106	0.0050	"	0.100		106	70-130
1,3,5-Trimethylbenzene	0.111	0.0050	"	0.100		111	70-130
Naphthalene	0.0898	0.0038	"	0.100		89.8	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0389		"	0.0400		97.3	50-150
Surrogate: Toluene-d8	0.0335		"	0.0400		83.8	50-150
Surrogate: 4-Bromofluorobenzene	0.0309		"	0.0400		77.2	50-150

Matrix Spike (BGC0284-MS1)

Source: 2303224-01

Prepared: 03/09/23 Analyzed: 03/10/23

Benzene	0.124	0.0020	mg/kg	0.100	ND	124	70-130
Toluene	0.128	0.0050	"	0.100	ND	128	70-130
Ethylbenzene	0.129	0.0050	"	0.100	ND	129	70-130
m,p-Xylene	0.255	0.010	"	0.200	ND	127	70-130
o-Xylene	0.119	0.0050	"	0.100	ND	119	70-130
1,2,4-Trimethylbenzene	0.123	0.0050	"	0.100	ND	123	70-130
1,3,5-Trimethylbenzene	0.124	0.0050	"	0.100	ND	124	70-130
Naphthalene	0.0892	0.0038	"	0.100	ND	89.2	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0449		"	0.0400		112	50-150
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	50-150
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	50-150

Matrix Spike (BGC0284-MS2)

Source: 2303224-02

Prepared: 03/09/23 Analyzed: 03/10/23

Benzene	0.101	0.0020	mg/kg	0.100	ND	101	70-130
Toluene	0.0992	0.0050	"	0.100	ND	99.2	70-130
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130
m,p-Xylene	0.217	0.010	"	0.200	ND	108	70-130
o-Xylene	0.105	0.0050	"	0.100	ND	105	70-130
1,2,4-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130
1,3,5-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130
Naphthalene	0.107	0.0038	"	0.100	ND	107	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0366		"	0.0400		91.4	50-150
Surrogate: Toluene-d8	0.0339		"	0.0400		84.8	50-150
Surrogate: 4-Bromofluorobenzene	0.0311		"	0.0400		77.8	50-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0284 - EPA 5030 Soil MS

Matrix Spike Dup (BGC0284-MSD1)

Source: 2303224-01

Prepared: 03/09/23 Analyzed: 03/10/23

Benzene	0.124	0.0020	mg/kg	0.100	ND	124	70-130	0.0483	30	
Toluene	0.128	0.0050	"	0.100	ND	128	70-130	0.140	30	
Ethylbenzene	0.127	0.0050	"	0.100	ND	127	70-130	1.29	30	
m,p-Xylene	0.254	0.010	"	0.200	ND	127	70-130	0.189	30	
o-Xylene	0.118	0.0050	"	0.100	ND	118	70-130	0.634	30	
1,2,4-Trimethylbenzene	0.122	0.0050	"	0.100	ND	122	70-130	0.884	30	
1,3,5-Trimethylbenzene	0.123	0.0050	"	0.100	ND	123	70-130	0.219	30	
Naphthalene	0.0940	0.0038	"	0.100	ND	94.0	70-130	5.27	30	
Surrogate: 1,2-Dichloroethane-d4	0.0476		"	0.0400		119	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	50-150			

Matrix Spike Dup (BGC0284-MSD2)

Source: 2303224-02

Prepared: 03/09/23 Analyzed: 03/10/23

Benzene	0.100	0.0020	mg/kg	0.100	ND	100	70-130	0.747	30	
Toluene	0.0995	0.0050	"	0.100	ND	99.5	70-130	0.272	30	
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	1.04	30	
m,p-Xylene	0.223	0.010	"	0.200	ND	112	70-130	2.84	30	
o-Xylene	0.108	0.0050	"	0.100	ND	108	70-130	2.70	30	
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	3.09	30	
1,3,5-Trimethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130	3.68	30	
Naphthalene	0.110	0.0038	"	0.100	ND	110	70-130	2.54	30	
Surrogate: 1,2-Dichloroethane-d4	0.0373		"	0.0400		93.2	50-150			
Surrogate: Toluene-d8	0.0339		"	0.0400		84.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0314		"	0.0400		78.5	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0285 - EPA 3550A

Blank (BGC0285-BLK1)

Prepared: 03/09/23 Analyzed: 03/10/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	7.80		"	12.5		62.4	30-150			

Blank (BGC0285-BLK2)

Prepared: 03/09/23 Analyzed: 03/10/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.2		"	12.5		81.5	30-150			

LCS (BGC0285-BS1)

Prepared: 03/09/23 Analyzed: 03/10/23

C10-C28 (DRO)	435	50	mg/kg	500		87.0	70-130			
Surrogate: o-Terphenyl	11.2		"	12.5		89.5	30-150			

LCS (BGC0285-BS2)

Prepared: 03/09/23 Analyzed: 03/10/23

C10-C28 (DRO)	464	50	mg/kg	500		92.8	70-130			
Surrogate: o-Terphenyl	11.3		"	12.5		90.1	30-150			

Matrix Spike (BGC0285-MS1)

Source: 2303223-01

Prepared: 03/09/23 Analyzed: 03/10/23

C10-C28 (DRO)	495	50	mg/kg	500	27.8	93.5	70-130			
Surrogate: o-Terphenyl	10.6		"	12.5		84.4	30-150			

Matrix Spike (BGC0285-MS2)

Source: 2303223-02

Prepared: 03/09/23 Analyzed: 03/10/23

C10-C28 (DRO)	492	50	mg/kg	500	23.0	93.7	70-130			
Surrogate: o-Terphenyl	10.7		"	12.5		85.3	30-150			

Matrix Spike Dup (BGC0285-MSD1)

Source: 2303223-01

Prepared: 03/09/23 Analyzed: 03/10/23

C10-C28 (DRO)	455	50	mg/kg	500	27.8	85.5	70-130	8.39	20	
Surrogate: o-Terphenyl	10.3		"	12.5		82.2	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0285 - EPA 3550A

Matrix Spike Dup (BGC0285-MSD2)

Source: 2303223-02

Prepared: 03/09/23 Analyzed: 03/10/23

C10-C28 (DRO)	454	50	mg/kg	500	23.0	86.3	70-130	7.90	20	
Surrogate: o-Terphenyl	10.5		"	12.5		83.8	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Reporting				Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0287 - EPA 5030 Soil MS

Blank (BGC0287-BLK1)

Prepared & Analyzed: 03/10/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0191		"	0.0333		57.3	40-150			
Surrogate: Fluoranthene-d10	0.0345		"	0.0333		103	40-150			

LCS (BGC0287-BS1)

Prepared & Analyzed: 03/10/23

Acenaphthene	0.0319	0.00500	mg/kg	0.0333		95.8	31-137			
Anthracene	0.0318	0.00500	"	0.0333		95.5	30-120			
Benzo (a) anthracene	0.0286	0.00500	"	0.0333		85.7	30-120			
Benzo (a) pyrene	0.0270	0.00500	"	0.0333		80.9	30-120			
Benzo (b) fluoranthene	0.0293	0.00500	"	0.0333		87.8	30-120			
Benzo (k) fluoranthene	0.0328	0.00500	"	0.0333		98.4	30-120			
Chrysene	0.0287	0.00500	"	0.0333		86.2	30-120			
Dibenz (a,h) anthracene	0.0300	0.00500	"	0.0333		90.1	30-120			
Fluoranthene	0.0317	0.00500	"	0.0333		95.2	30-120			
Fluorene	0.0324	0.00500	"	0.0333		97.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0286	0.00500	"	0.0333		85.8	30-120			
Pyrene	0.0341	0.00500	"	0.0333		102	35-142			
1-Methylnaphthalene	0.0344	0.00500	"	0.0333		103	35-142			
2-Methylnaphthalene	0.0230	0.00500	"	0.0333		68.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0380		"	0.0333		114	40-150			
Surrogate: Fluoranthene-d10	0.0340		"	0.0333		102	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0287 - EPA 5030 Soil MS

Matrix Spike (BGC0287-MS1)

Source: 2303221-01

Prepared & Analyzed: 03/10/23

Acenaphthene	0.0223	0.00500	mg/kg	0.0333	ND	67.0	31-137		
Anthracene	0.0237	0.00500	"	0.0333	ND	71.2	30-120		
Benzo (a) anthracene	0.0258	0.00500	"	0.0333	ND	77.5	30-120		
Benzo (a) pyrene	0.0212	0.00500	"	0.0333	ND	63.6	30-120		
Benzo (b) fluoranthene	0.0227	0.00500	"	0.0333	ND	68.1	30-120		
Benzo (k) fluoranthene	0.0233	0.00500	"	0.0333	ND	69.8	30-120		
Chrysene	0.0201	0.00500	"	0.0333	ND	60.2	30-120		
Dibenz (a,h) anthracene	0.0220	0.00500	"	0.0333	ND	65.9	30-120		
Fluoranthene	0.0248	0.00500	"	0.0333	ND	74.5	30-120		
Fluorene	0.0227	0.00500	"	0.0333	ND	68.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0218	0.00500	"	0.0333	ND	65.5	30-120		
Pyrene	0.0251	0.00500	"	0.0333	ND	75.2	35-142		
1-Methylnaphthalene	0.0215	0.00500	"	0.0333	ND	64.4	15-130		
2-Methylnaphthalene	0.0189	0.00500	"	0.0333	ND	56.7	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0259		"	0.0333		77.7	40-150		
Surrogate: Fluoranthene-d10	0.0268		"	0.0333		80.4	40-150		

Matrix Spike Dup (BGC0287-MSD1)

Source: 2303221-01

Prepared & Analyzed: 03/10/23

Acenaphthene	0.0223	0.00500	mg/kg	0.0333	ND	66.9	31-137	0.122	30
Anthracene	0.0237	0.00500	"	0.0333	ND	71.0	30-120	0.305	30
Benzo (a) anthracene	0.0263	0.00500	"	0.0333	ND	78.9	30-120	1.77	30
Benzo (a) pyrene	0.0216	0.00500	"	0.0333	ND	64.9	30-120	1.99	30
Benzo (b) fluoranthene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	1.55	30
Benzo (k) fluoranthene	0.0234	0.00500	"	0.0333	ND	70.1	30-120	0.412	30
Chrysene	0.0204	0.00500	"	0.0333	ND	61.3	30-120	1.81	30
Dibenz (a,h) anthracene	0.0245	0.00500	"	0.0333	ND	73.5	30-120	10.9	30
Fluoranthene	0.0228	0.00500	"	0.0333	ND	68.4	30-120	8.53	30
Fluorene	0.0226	0.00500	"	0.0333	ND	67.7	30-120	0.571	30
Indeno (1,2,3-cd) pyrene	0.0237	0.00500	"	0.0333	ND	71.0	30-120	7.98	30
Pyrene	0.0258	0.00500	"	0.0333	ND	77.4	35-142	2.94	30
1-Methylnaphthalene	0.0237	0.00500	"	0.0333	ND	71.0	15-130	9.76	50
2-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.2	15-130	6.03	50
Surrogate: 2-Methylnaphthalene-d10	0.0271		"	0.0333		81.2	40-150		
Surrogate: Fluoranthene-d10	0.0253		"	0.0333		76.0	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0282 - EPA 3050B

Blank (BGC0282-BLK1)

Prepared: 03/09/23 Analyzed: 03/13/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGC0282-BS1)

Prepared: 03/09/23 Analyzed: 03/13/23

Arsenic	38.6	0.200	mg/kg wet	40.0	96.5	80-120
Barium	40.1	0.400	"	40.0	100	80-120
Selenium	4.21	0.260	"	4.00	105	80-120

Duplicate (BGC0282-DUP1)

Source: 2303221-01

Prepared: 03/09/23 Analyzed: 03/13/23

Arsenic	0.196	0.200	mg/kg dry	0.280	35.0	20	QR-01
Barium	10.6	0.400	"	11.7	10.5	20	
Selenium	ND	0.260	"	ND		20	

Matrix Spike (BGC0282-MS1)

Source: 2303221-01

Prepared: 03/09/23 Analyzed: 03/13/23

Arsenic	50.8	0.200	mg/kg dry	49.6	0.280	102	75-125
Barium	64.5	0.400	"	49.6	11.7	106	75-125
Selenium	5.41	0.260	"	4.96	ND	109	75-125

Matrix Spike Dup (BGC0282-MSD1)

Source: 2303221-01

Prepared: 03/09/23 Analyzed: 03/13/23

Arsenic	51.6	0.200	mg/kg dry	49.6	0.280	103	75-125	1.44	25
Barium	64.6	0.400	"	49.6	11.7	107	75-125	0.164	25
Selenium	5.67	0.260	"	4.96	ND	114	75-125	4.70	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0308 - General Preparation

Duplicate (BGC0308-DUP1)		Source: 2303075-01		Prepared: 03/10/23 Analyzed: 03/13/23	
% Solids	95.3		%	95.5	0.210 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0326 - General Preparation

LCS (BGC0326-BS1)

Prepared: 03/12/23 Analyzed: 03/13/23

pH	9.09	pH Units	9.18	99.0	95-105
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Duplicate (BGC0326-DUP1)

Source: 2303221-01

Prepared: 03/12/23 Analyzed: 03/13/23

pH	7.58	pH Units	7.68	1.31	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/23 14:24

Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 20, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2303313

Enclosed are the results of analyses for samples received by Summit Scientific on 03/13/23 18:03. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS197@12'	2303313-01	Soil	03/13/23 11:05	03/13/23 18:03

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: <i>Warning 3,4-2 Tank Battery</i>		PO/Billing Codes:	
Sampler Name: <i>S. Anderson</i>		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ✕	PAHs ✕	Metals ✕		
1	SS197 c12'	3/13/23	1105	2			X			X			X	X	X		X	X	X		
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <i>[Signature]</i>	Date/Time: 3/13/23 1625	Received by: <i>Tasman Lockbox</i>	Date/Time: 3/13/23 1625	TAT Business Days	Field DO	Notes: * = pH only * = PAHs = Chrysene, Pyrene, Fluorene, 1-m, 2-m. * = Metals = Arsenic, Barium, Selenium. * pH, PAHs and metals on 48 hour turn around.
Relinquished by: <i>Tasman Lockbox</i>	Date/Time: 3/13/23 1703	Received by: <i>[Signature]</i>	Date/Time: 3/13/23 1803	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt: 8.9	Corrected Temperature: <i>[Signature]</i>	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2303313Client: PDC TomanClient Project ID: Warming 3,42 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #: _____

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☐

Other

☐

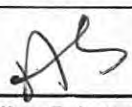
Temp (°C)

8.9

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

 Custodian Printed Name

3/13/23
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

SS197@12'
2303313-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/13/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGC0342	03/13/23	03/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/13/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/13/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0343	03/13/23	03/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/13/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		120 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

SS197@12'
2303313-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/13/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0426	03/15/23	03/17/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/13/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		94.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/13/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGC0389	03/14/23	03/16/23	EPA 6020B	
Barium	4.51	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/13/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.9			%	1	BGC0456	03/15/23	03/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/13/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/20/23 16:43

SS197@12'
2303313-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.15	pH Units	1	BGC0394	03/14/23	03/14/23	EPA 9045D
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0342 - EPA 5030 Soil MS

Blank (BGC0342-BLK1)

Prepared: 03/13/23 Analyzed: 03/14/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0430		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.6	50-150			

Blank (BGC0342-BLK2)

Prepared: 03/13/23 Analyzed: 03/14/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0425		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	50-150			

LCS (BGC0342-BS1)

Prepared: 03/13/23 Analyzed: 03/14/23

Benzene	0.127	0.0020	mg/kg	0.125		101	70-130			
Toluene	0.138	0.0050	"	0.125		110	70-130			
Ethylbenzene	0.127	0.0050	"	0.125		102	70-130			
m,p-Xylene	0.253	0.010	"	0.250		101	70-130			
o-Xylene	0.117	0.0050	"	0.125		93.8	70-130			
1,2,4-Trimethylbenzene	0.123	0.0050	"	0.125		98.7	70-130			
1,3,5-Trimethylbenzene	0.124	0.0050	"	0.125		99.1	70-130			
Naphthalene	0.101	0.0038	"	0.125		80.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0430		"	0.0400		108	50-150			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0342 - EPA 5030 Soil MS

LCS (BGC0342-BS2)

Prepared: 03/13/23 Analyzed: 03/14/23

Benzene	0.132	0.0020	mg/kg	0.125		106	70-130			
Toluene	0.139	0.0050	"	0.125		111	70-130			
Ethylbenzene	0.131	0.0050	"	0.125		105	70-130			
m,p-Xylene	0.260	0.010	"	0.250		104	70-130			
o-Xylene	0.119	0.0050	"	0.125		95.5	70-130			
1,2,4-Trimethylbenzene	0.124	0.0050	"	0.125		98.9	70-130			
1,3,5-Trimethylbenzene	0.127	0.0050	"	0.125		101	70-130			
Naphthalene	0.105	0.0038	"	0.125		84.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0408		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150			

Matrix Spike (BGC0342-MS1)

Source: 2303225-02

Prepared: 03/13/23 Analyzed: 03/14/23

Benzene	0.130	0.0020	mg/kg	0.125	ND	104	70-130			
Toluene	0.138	0.0050	"	0.125	ND	110	70-130			
Ethylbenzene	0.129	0.0050	"	0.125	ND	103	70-130			
m,p-Xylene	0.257	0.010	"	0.250	ND	103	70-130			
o-Xylene	0.121	0.0050	"	0.125	ND	96.7	70-130			
1,2,4-Trimethylbenzene	0.125	0.0050	"	0.125	ND	100	70-130			
1,3,5-Trimethylbenzene	0.126	0.0050	"	0.125	ND	101	70-130			
Naphthalene	0.110	0.0038	"	0.125	ND	88.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0441		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0428		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		100	50-150			

Matrix Spike (BGC0342-MS2)

Source: 2303225-01

Prepared: 03/13/23 Analyzed: 03/14/23

Benzene	0.130	0.0020	mg/kg	0.125	ND	104	70-130			
Toluene	0.136	0.0050	"	0.125	ND	109	70-130			
Ethylbenzene	0.129	0.0050	"	0.125	ND	103	70-130			
m,p-Xylene	0.257	0.010	"	0.250	ND	103	70-130			
o-Xylene	0.118	0.0050	"	0.125	ND	94.6	70-130			
1,2,4-Trimethylbenzene	0.125	0.0050	"	0.125	ND	99.6	70-130			
1,3,5-Trimethylbenzene	0.126	0.0050	"	0.125	ND	101	70-130			
Naphthalene	0.113	0.0038	"	0.125	ND	90.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0434		"	0.0400		108	50-150			
Surrogate: Toluene-d8	0.0418		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		101	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0342 - EPA 5030 Soil MS

Matrix Spike Dup (BGC0342-MSD1)

Source: 2303225-02

Prepared: 03/13/23 Analyzed: 03/14/23

Benzene	0.130	0.0020	mg/kg	0.125	ND	104	70-130	0.208	30	
Toluene	0.136	0.0050	"	0.125	ND	109	70-130	0.898	30	
Ethylbenzene	0.130	0.0050	"	0.125	ND	104	70-130	0.696	30	
m,p-Xylene	0.258	0.010	"	0.250	ND	103	70-130	0.361	30	
o-Xylene	0.119	0.0050	"	0.125	ND	95.3	70-130	1.48	30	
1,2,4-Trimethylbenzene	0.123	0.0050	"	0.125	ND	98.5	70-130	1.79	30	
1,3,5-Trimethylbenzene	0.124	0.0050	"	0.125	ND	98.9	70-130	2.04	30	
Naphthalene	0.110	0.0038	"	0.125	ND	87.6	70-130	0.628	30	
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0423		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150			

Matrix Spike Dup (BGC0342-MSD2)

Source: 2303225-01

Prepared: 03/13/23 Analyzed: 03/14/23

Benzene	0.127	0.0020	mg/kg	0.125	ND	101	70-130	2.80	30	
Toluene	0.140	0.0050	"	0.125	ND	112	70-130	2.81	30	
Ethylbenzene	0.129	0.0050	"	0.125	ND	104	70-130	0.186	30	
m,p-Xylene	0.260	0.010	"	0.250	ND	104	70-130	1.09	30	
o-Xylene	0.121	0.0050	"	0.125	ND	96.7	70-130	2.18	30	
1,2,4-Trimethylbenzene	0.126	0.0050	"	0.125	ND	100	70-130	0.792	30	
1,3,5-Trimethylbenzene	0.126	0.0050	"	0.125	ND	101	70-130	0.452	30	
Naphthalene	0.112	0.0038	"	0.125	ND	89.5	70-130	1.07	30	
Surrogate: 1,2-Dichloroethane-d4	0.0438		"	0.0400		109	50-150			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0343 - EPA 3550A

Blank (BGC0343-BLK1)

Prepared: 03/13/23 Analyzed: 03/14/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.5		"	12.5		108	30-150			

Blank (BGC0343-BLK2)

Prepared: 03/13/23 Analyzed: 03/14/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.9		"	12.5		111	30-150			

LCS (BGC0343-BS1)

Prepared: 03/13/23 Analyzed: 03/14/23

C10-C28 (DRO)	543	50	mg/kg	500		109	70-130			
Surrogate: o-Terphenyl	13.9		"	12.5		111	30-150			

LCS (BGC0343-BS2)

Prepared: 03/13/23 Analyzed: 03/14/23

C10-C28 (DRO)	594	50	mg/kg	500		119	70-130			
Surrogate: o-Terphenyl	15.4		"	12.5		124	30-150			

Matrix Spike (BGC0343-MS1)

Source: 2303225-02

Prepared: 03/13/23 Analyzed: 03/14/23

C10-C28 (DRO)	599	50	mg/kg	500	12.7	117	70-130			
Surrogate: o-Terphenyl	15.1		"	12.5		121	30-150			

Matrix Spike (BGC0343-MS2)

Source: 2303225-01

Prepared: 03/13/23 Analyzed: 03/14/23

C10-C28 (DRO)	587	50	mg/kg	500	11.3	115	70-130			
Surrogate: o-Terphenyl	13.5		"	12.5		108	30-150			

Matrix Spike Dup (BGC0343-MSD1)

Source: 2303225-02

Prepared: 03/13/23 Analyzed: 03/14/23

C10-C28 (DRO)	602	50	mg/kg	500	12.7	118	70-130	0.499	20	
Surrogate: o-Terphenyl	13.9		"	12.5		111	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0343 - EPA 3550A

Matrix Spike Dup (BGC0343-MSD2)

Source: 2303225-01

Prepared: 03/13/23 Analyzed: 03/14/23

C10-C28 (DRO)	551	50	mg/kg	500	11.3	108	70-130	6.22	20	
Surrogate: o-Terphenyl	15.4		"	12.5		124	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result		%REC	Limits	RPD	Notes

Batch BGC0426 - EPA 5030 Soil MS

Blank (BGC0426-BLK1)

Prepared: 03/15/23 Analyzed: 03/17/23

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0375	"	0.0333	112	40-150
Surrogate: Fluoranthene-d10	0.0321	"	0.0333	96.2	40-150

LCS (BGC0426-BS1)

Prepared: 03/15/23 Analyzed: 03/17/23

Acenaphthene	0.0354	0.00500	mg/kg	0.0333	106	31-137
Anthracene	0.0358	0.00500	"	0.0333	107	30-120
Benzo (a) anthracene	0.0253	0.00500	"	0.0333	76.0	30-120
Benzo (a) pyrene	0.0300	0.00500	"	0.0333	90.0	30-120
Benzo (b) fluoranthene	0.0269	0.00500	"	0.0333	80.6	30-120
Benzo (k) fluoranthene	0.0311	0.00500	"	0.0333	93.3	30-120
Chrysene	0.0275	0.00500	"	0.0333	82.6	30-120
Dibenz (a,h) anthracene	0.0348	0.00500	"	0.0333	104	30-120
Fluoranthene	0.0334	0.00500	"	0.0333	100	30-120
Fluorene	0.0396	0.00500	"	0.0333	119	30-120
Indeno (1,2,3-cd) pyrene	0.0316	0.00500	"	0.0333	94.7	30-120
Pyrene	0.0291	0.00500	"	0.0333	87.4	35-142
1-Methylnaphthalene	0.0364	0.00500	"	0.0333	109	35-142
2-Methylnaphthalene	0.0345	0.00500	"	0.0333	104	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0379	"	0.0333	114	40-150
Surrogate: Fluoranthene-d10	0.0348	"	0.0333	104	40-150

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Reporting				Spike	Source	%REC			RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0426 - EPA 5030 Soil MS

Matrix Spike (BGC0426-MS1)			Source: 2303292-01		Prepared: 03/15/23 Analyzed: 03/17/23					
Acenaphthene	0.0976	0.00500	mg/kg	0.0333	0.0943	9.76	31-137			QM-02
Anthracene	0.134	0.00500	"	0.0333	0.110	72.6	30-120			
Benzo (a) anthracene	0.128	0.00500	"	0.0333	0.113	42.3	30-120			
Benzo (a) pyrene	0.0733	0.00500	"	0.0333	0.0595	41.4	30-120			
Benzo (b) fluoranthene	0.103	0.00500	"	0.0333	0.0912	36.5	30-120			
Benzo (k) fluoranthene	0.0504	0.00500	"	0.0333	0.0344	48.2	30-120			
Chrysene	0.135	0.00500	"	0.0333	0.121	41.1	30-120			
Dibenz (a,h) anthracene	0.0232	0.00500	"	0.0333	0.0132	30.1	30-120			
Fluoranthene	0.334	0.00500	"	0.0333	0.298	109	30-120			
Fluorene	0.156	0.00500	"	0.0333	0.150	17.6	30-120			QM-02
Indeno (1,2,3-cd) pyrene	0.0529	0.00500	"	0.0333	0.0392	41.2	30-120			
Pyrene	0.208	0.00500	"	0.0333	0.185	71.1	35-142			
1-Methylnaphthalene	0.0431	0.00500	"	0.0333	0.0149	84.5	15-130			
2-Methylnaphthalene	0.0626	0.00500	"	0.0333	0.0296	99.1	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0294		"	0.0333		88.2	40-150			
Surrogate: Fluoranthene-d10	0.0268		"	0.0333		80.5	40-150			

Matrix Spike Dup (BGC0426-MSD1)			Source: 2303292-01		Prepared: 03/15/23 Analyzed: 03/17/23					
Acenaphthene	0.134	0.00500	mg/kg	0.0333	0.0943	118	31-137	31.2	30	QM-02
Anthracene	0.195	0.00500	"	0.0333	0.110	253	30-120	36.6	30	QM-02
Benzo (a) anthracene	0.184	0.00500	"	0.0333	0.113	211	30-120	36.2	30	QM-02
Benzo (a) pyrene	0.104	0.00500	"	0.0333	0.0595	134	30-120	34.7	30	QM-02
Benzo (b) fluoranthene	0.146	0.00500	"	0.0333	0.0912	164	30-120	34.2	30	QM-02
Benzo (k) fluoranthene	0.0704	0.00500	"	0.0333	0.0344	108	30-120	33.1	30	QM-02
Chrysene	0.199	0.00500	"	0.0333	0.121	234	30-120	38.5	30	QM-02
Dibenz (a,h) anthracene	0.0320	0.00500	"	0.0333	0.0132	56.3	30-120	31.7	30	QM-02
Fluoranthene	0.426	0.00500	"	0.0333	0.298	386	30-120	24.3	30	QM-02
Fluorene	0.184	0.00500	"	0.0333	0.150	101	30-120	16.4	30	
Indeno (1,2,3-cd) pyrene	0.0744	0.00500	"	0.0333	0.0392	106	30-120	33.7	30	QM-02
Pyrene	0.290	0.00500	"	0.0333	0.185	318	35-142	33.0	30	QM-02
1-Methylnaphthalene	0.0568	0.00500	"	0.0333	0.0149	126	15-130	27.5	50	
2-Methylnaphthalene	0.0895	0.00500	"	0.0333	0.0296	180	15-130	35.4	50	QM-02
Surrogate: 2-Methylnaphthalene-d10	0.0357		"	0.0333		107	40-150			
Surrogate: Fluoranthene-d10	0.0284		"	0.0333		85.2	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0389 - EPA 3050B

Blank (BGC0389-BLK1)

Prepared: 03/14/23 Analyzed: 03/16/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGC0389-BS1)

Prepared: 03/14/23 Analyzed: 03/16/23

Arsenic	37.0	0.200	mg/kg wet	40.0	92.4	80-120
Barium	34.7	0.400	"	40.0	86.6	80-120
Selenium	3.60	0.260	"	4.00	90.1	80-120

Duplicate (BGC0389-DUP1)

Source: 2303256-51

Prepared: 03/14/23 Analyzed: 03/16/23

Arsenic	0.682	0.200	mg/kg dry	0.635	7.14	20
Barium	44.9	0.400	"	44.9	0.120	20
Selenium	0.342	0.260	"	0.385	12.0	20

Matrix Spike (BGC0389-MS1)

Source: 2303256-51

Prepared: 03/14/23 Analyzed: 03/16/23

Arsenic	38.2	0.200	mg/kg dry	42.3	0.635	88.8	75-125
Barium	84.7	0.400	"	42.3	44.9	93.9	75-125
Selenium	3.62	0.260	"	4.23	0.385	76.4	75-125

Matrix Spike Dup (BGC0389-MSD1)

Source: 2303256-51

Prepared: 03/14/23 Analyzed: 03/16/23

Arsenic	39.5	0.200	mg/kg dry	42.3	0.635	91.7	75-125	3.17	25
Barium	86.0	0.400	"	42.3	44.9	96.9	75-125	1.49	25
Selenium	3.65	0.260	"	4.23	0.385	77.0	75-125	0.662	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting			Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BGC0456 - General Preparation

Duplicate (BGC0456-DUP1)

Source: 2303312-01

Prepared: 03/15/23 Analyzed: 03/16/23

% Solids	83.8	%		82.9		1.10	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/20/23 16:43

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0394 - General Preparation

LCS (BGC0394-BS1)

Prepared & Analyzed: 03/14/23

pH	9.03	pH Units	9.18	98.4	95-105
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Duplicate (BGC0394-DUP1)

Source: 2302482-13

Prepared & Analyzed: 03/14/23

pH	5.72	pH Units	5.89	2.93	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/20/23 16:43

Notes and Definitions

QM-02	The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 21, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2303340

Enclosed are the results of analyses for samples received by Summit Scientific on 03/14/23 17:47. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely". The signature is written in a cursive, flowing style.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS198@12'	2303340-01	Soil	03/14/23 10:18	03/14/23 17:47
SS199@8'	2303340-02	Soil	03/14/23 10:54	03/14/23 17:47
SS200@10'	2303340-03	Soil	03/14/23 10:59	03/14/23 17:47
SS201@12'	2303340-04	Soil	03/14/23 12:39	03/14/23 17:47
SS202@8'	2303340-05	Soil	03/14/23 14:50	03/14/23 17:47
SS203@10'	2303340-06	Soil	03/14/23 14:54	03/14/23 17:47
SS204@8'	2303340-07	Soil	03/14/23 15:19	03/14/23 17:47
SS205@10'	2303340-08	Soil	03/14/23 15:22	03/14/23 17:47

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Werning 3, 4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested							Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ✕	PAHs ✕	Metals ✕		
1	SS198e12'	3/14/23	1018	2			X			X			X	X	X		X	X	X		
2	SS199e8'	↓	1054	↓						↓			↓	↓	↓		↓	↓	↓		
3	SS200e10'	↓	1059	↓						↓			↓	↓	↓		↓	↓	↓		
4	SS201e12'	↓	1239	↓						↓			↓	↓	↓		↓	↓	↓		
5	SS202e8'	↓	1450	↓						↓			↓	↓	↓		↓	↓	↓		
6	SS203e10'	↓	1454	↓			↓			↓			↓	↓	↓		↓	↓	↓		
7	SS204e8'	↓	1519	2			X			X			X	X	X		X	X	X		
8	SS205e10'	↓	1522	2			X			X			X	X	X		X	X	X		
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <i>[Signature]</i>	Date/Time: 3/14/23 1623	Received by: Tasman Lockbox	Date/Time: 3/14/23 1623	TAT Business Days	Field DO	Notes: pH = pH only PAHs = chrysene, pyrene, fluorene, 1-m, 2-m. Metals = Arsenic, Barium, Selenium. pH, PAHs and metals on 48 hour turn-around.
Relinquished by: Tasman Lockbox	Date/Time: 3/14/23 1747	Received by: <i>[Signature]</i>	Date/Time: 3/14/23 1747	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day <input type="checkbox"/>	Field ORP	
				2 Days <input type="checkbox"/>	Field pH	
				3 Days <input type="checkbox"/>	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard <input type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: 11.7	Corrected Temperature: <i>[Signature]</i>	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2303340Client: PactosmanClient Project ID: Warning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐Airbill #: ☐

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply)

Air

☐

Sol

☒

Solid

☐

Water

☐

Other

☐

Temp (°C)

11.7

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Custodian Printed Name

Date/Time

AS

3/14/23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS198@12'
2303340-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/14/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0415	03/14/23	03/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/14/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		144 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/14/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0416	03/14/23	03/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/14/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		82.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS198@12'
2303340-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/14/23 10:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0469	03/16/23	03/18/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/14/23 10:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		72.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		105 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/14/23 10:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.970	0.200		mg/kg dry	1	BGC0460	03/15/23	03/17/23	EPA 6020B	
Barium	6.26	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/14/23 10:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.4			%	1	BGC0626	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/14/23 10:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/21/23 11:08

SS198@12'
2303340-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.42	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS199@8'
2303340-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/14/23 10:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0415	03/14/23	03/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/14/23 10:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		131 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/14/23 10:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0416	03/14/23	03/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/14/23 10:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		91.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS199@8'
2303340-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/14/23 10:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0469	03/16/23	03/18/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/14/23 10:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/14/23 10:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.785	0.200		mg/kg dry	1	BGC0460	03/15/23	03/17/23	EPA 6020B	
Barium	114	0.400		"	"	"	"	"	"	
Selenium	1.28	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/14/23 10:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	76.3			%	1	BGC0626	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/14/23 10:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS199@8'
2303340-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.21	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS200@10'
2303340-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/14/23 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0415	03/14/23	03/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/14/23 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		125 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/14/23 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0416	03/14/23	03/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/14/23 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		76.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS200@10'
2303340-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/14/23 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0469	03/16/23	03/18/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/14/23 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		80.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		104 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/14/23 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGC0460	03/15/23	03/17/23	EPA 6020B	
Barium	4.56	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/14/23 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.5			%	1	BGC0626	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/14/23 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/21/23 11:08

SS200@10'
2303340-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.36	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS201@12'
2303340-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/14/23 12:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0415	03/14/23	03/15/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/14/23 12:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		133 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/14/23 12:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0416	03/14/23	03/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/14/23 12:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		57.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS201@12'
2303340-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/14/23 12:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0469	03/16/23	03/18/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/14/23 12:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		63.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		94.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/14/23 12:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.219	0.200		mg/kg dry	1	BGC0460	03/15/23	03/17/23	EPA 6020B	
Barium	6.53	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/14/23 12:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	91.4			%	1	BGC0626	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/14/23 12:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS201@12'
2303340-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.47	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS202@8'
2303340-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/14/23 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0415	03/14/23	03/15/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/14/23 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		139 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/14/23 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0416	03/14/23	03/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/14/23 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		57.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS202@8'
2303340-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/14/23 14:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0469	03/16/23	03/18/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/14/23 14:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		51.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		68.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/14/23 14:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.608	0.200		mg/kg dry	1	BGC0460	03/15/23	03/17/23	EPA 6020B	
Barium	19.9	0.400		"	"	"	"	"	"	
Selenium	0.214	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/14/23 14:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.2			%	1	BGC0626	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/14/23 14:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS202@8'
2303340-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.57	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS203@10'
2303340-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/14/23 14:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0415	03/14/23	03/15/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/14/23 14:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		134 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/14/23 14:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0416	03/14/23	03/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/14/23 14:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		76.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS203@10'
2303340-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/14/23 14:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0469	03/16/23	03/18/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/14/23 14:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		60.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		92.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/14/23 14:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGC0460	03/15/23	03/17/23	EPA 6020B	
Barium	4.53	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/14/23 14:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.6			%	1	BGC0626	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/14/23 14:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS203@10'
2303340-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.54	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS204@8'
2303340-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/14/23 15:19**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0415	03/14/23	03/15/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/14/23 15:19**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		144 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/14/23 15:19**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0416	03/14/23	03/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/14/23 15:19**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		76.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS204@8'
2303340-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/14/23 15:19**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0469	03/16/23	03/18/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/14/23 15:19**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		51.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/14/23 15:19**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.217	0.200		mg/kg dry	1	BGC0460	03/15/23	03/17/23	EPA 6020B	
Barium	64.9	0.400		"	"	"	"	"	"	
Selenium	0.416	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/14/23 15:19**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.4			%	1	BGC0626	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/14/23 15:19**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS204@8'
2303340-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.26	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS205@10'
2303340-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/14/23 15:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0415	03/14/23	03/15/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/14/23 15:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		142 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/14/23 15:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0416	03/14/23	03/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/14/23 15:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		80.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS205@10'
2303340-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/14/23 15:22**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0469	03/16/23	03/18/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/14/23 15:22**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		70.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		97.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/14/23 15:22**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.380	0.200		mg/kg dry	1	BGC0460	03/15/23	03/17/23	EPA 6020B	
Barium	4.56	0.400		"	"	"	"	"	"	
Selenium	0.203	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/14/23 15:22**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.0			%	1	BGC0626	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/14/23 15:22**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

SS205@10'
2303340-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.81	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0415 - EPA 5030 Soil MS

Blank (BGC0415-BLK1)

Prepared: 03/14/23 Analyzed: 03/15/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0400		98.3	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0434		"	0.0400		109	50-150			

Blank (BGC0415-BLK2)

Prepared: 03/14/23 Analyzed: 03/15/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.6	50-150			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0443		"	0.0400		111	50-150			

LCS (BGC0415-BS1)

Prepared: 03/14/23 Analyzed: 03/15/23

Benzene	0.0924	0.0020	mg/kg	0.125		73.9	70-130			
Toluene	0.111	0.0050	"	0.125		88.6	70-130			
Ethylbenzene	0.138	0.0050	"	0.125		110	70-130			
m,p-Xylene	0.274	0.010	"	0.250		110	70-130			
o-Xylene	0.128	0.0050	"	0.125		102	70-130			
1,2,4-Trimethylbenzene	0.148	0.0050	"	0.125		119	70-130			
1,3,5-Trimethylbenzene	0.151	0.0050	"	0.125		121	70-130			
Naphthalene	0.0971	0.0038	"	0.125		77.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0415 - EPA 5030 Soil MS

LCS (BGC0415-BS2)

Prepared: 03/14/23 Analyzed: 03/15/23

Benzene	0.117	0.0020	mg/kg	0.125		93.3	70-130			
Toluene	0.106	0.0050	"	0.125		84.8	70-130			
Ethylbenzene	0.137	0.0050	"	0.125		109	70-130			
m,p-Xylene	0.272	0.010	"	0.250		109	70-130			
o-Xylene	0.127	0.0050	"	0.125		102	70-130			
1,2,4-Trimethylbenzene	0.149	0.0050	"	0.125		119	70-130			
1,3,5-Trimethylbenzene	0.152	0.0050	"	0.125		121	70-130			
Naphthalene	0.103	0.0038	"	0.125		82.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

Matrix Spike (BGC0415-MS1)

Source: 2303333-04

Prepared: 03/14/23 Analyzed: 03/15/23

Benzene	0.131	0.0020	mg/kg	0.125	0.0172	90.6	70-130			
Toluene	0.0980	0.0050	"	0.125	ND	78.4	70-130			
Ethylbenzene	0.196	0.0050	"	0.125	0.0902	84.5	70-130			
m,p-Xylene	0.617	0.010	"	0.250	0.525	36.9	70-130			QM-02
o-Xylene	0.163	0.0050	"	0.125	0.0502	89.9	70-130			
1,2,4-Trimethylbenzene	0.507	0.0050	"	0.125	0.526	NR	70-130			QM-02
1,3,5-Trimethylbenzene	0.243	0.0050	"	0.125	0.204	31.3	70-130			QM-02
Naphthalene	0.216	0.0038	"	0.125	0.142	59.4	70-130			QM-02
Surrogate: 1,2-Dichloroethane-d4	0.0428		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0355		"	0.0400		88.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0516		"	0.0400		129	50-150			

Matrix Spike (BGC0415-MS2)

Source: 2303333-05

Prepared: 03/14/23 Analyzed: 03/15/23

Benzene	0.143	0.0020	mg/kg	0.125	ND	115	70-130			
Toluene	0.103	0.0050	"	0.125	ND	82.2	70-130			
Ethylbenzene	0.133	0.0050	"	0.125	ND	106	70-130			
m,p-Xylene	0.265	0.010	"	0.250	ND	106	70-130			
o-Xylene	0.125	0.0050	"	0.125	ND	99.6	70-130			
1,2,4-Trimethylbenzene	0.148	0.0050	"	0.125	ND	119	70-130			
1,3,5-Trimethylbenzene	0.148	0.0050	"	0.125	ND	118	70-130			
Naphthalene	0.122	0.0038	"	0.125	0.00363	94.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		104	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0415 - EPA 5030 Soil MS

Matrix Spike Dup (BGC0415-MSD1)		Source: 2303333-04			Prepared: 03/14/23 Analyzed: 03/15/23					
Benzene	0.137	0.0020	mg/kg	0.125	0.0172	95.8	70-130	4.80	30	
Toluene	0.0982	0.0050	"	0.125	ND	78.5	70-130	0.184	30	
Ethylbenzene	0.201	0.0050	"	0.125	0.0902	89.0	70-130	2.84	30	
m,p-Xylene	0.652	0.010	"	0.250	0.525	51.1	70-130	5.58	30	QM-02
o-Xylene	0.164	0.0050	"	0.125	0.0502	91.0	70-130	0.864	30	
1,2,4-Trimethylbenzene	0.563	0.0050	"	0.125	0.526	29.0	70-130	10.5	30	QM-02
1,3,5-Trimethylbenzene	0.238	0.0050	"	0.125	0.204	27.5	70-130	1.97	30	QM-02
Naphthalene	0.227	0.0038	"	0.125	0.142	67.6	70-130	4.58	30	QM-02
Surrogate: 1,2-Dichloroethane-d4		0.0436	"	0.0400		109	50-150			
Surrogate: Toluene-d8		0.0359	"	0.0400		89.8	50-150			
Surrogate: 4-Bromofluorobenzene		0.0533	"	0.0400		133	50-150			

Matrix Spike Dup (BGC0415-MSD2)		Source: 2303333-05			Prepared: 03/14/23 Analyzed: 03/15/23					
Benzene	0.141	0.0020	mg/kg	0.125	ND	112	70-130	1.94	30	
Toluene	0.0982	0.0050	"	0.125	ND	78.6	70-130	4.45	30	
Ethylbenzene	0.132	0.0050	"	0.125	ND	105	70-130	0.885	30	
m,p-Xylene	0.262	0.010	"	0.250	ND	105	70-130	1.12	30	
o-Xylene	0.125	0.0050	"	0.125	ND	99.7	70-130	0.0482	30	
1,2,4-Trimethylbenzene	0.148	0.0050	"	0.125	ND	119	70-130	0.0607	30	
1,3,5-Trimethylbenzene	0.147	0.0050	"	0.125	ND	118	70-130	0.406	30	
Naphthalene	0.118	0.0038	"	0.125	0.00363	91.8	70-130	3.05	30	
Surrogate: 1,2-Dichloroethane-d4		0.0412	"	0.0400		103	50-150			
Surrogate: Toluene-d8		0.0406	"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene		0.0406	"	0.0400		102	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0416 - EPA 3550A

Blank (BGC0416-BLK1)

Prepared: 03/14/23 Analyzed: 03/15/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.8		"	12.5		86.0	30-150			

Blank (BGC0416-BLK2)

Prepared: 03/14/23 Analyzed: 03/15/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.0		"	12.5		80.0	30-150			

LCS (BGC0416-BS1)

Prepared: 03/14/23 Analyzed: 03/15/23

C10-C28 (DRO)	481	50	mg/kg	500		96.3	70-130			
Surrogate: o-Terphenyl	9.13		"	12.5		73.1	30-150			

LCS (BGC0416-BS2)

Prepared: 03/14/23 Analyzed: 03/15/23

C10-C28 (DRO)	513	50	mg/kg	500		103	70-130			
Surrogate: o-Terphenyl	11.4		"	12.5		91.2	30-150			

Matrix Spike (BGC0416-MS1)

Source: 2303333-05

Prepared: 03/14/23 Analyzed: 03/15/23

C10-C28 (DRO)	408	50	mg/kg	500	38.4	74.0	70-130			
Surrogate: o-Terphenyl	9.34		"	12.5		74.7	30-150			

Matrix Spike (BGC0416-MS2)

Source: 2303333-02

Prepared: 03/14/23 Analyzed: 03/15/23

C10-C28 (DRO)	3460	50	mg/kg	500	2900	111	70-130			
Surrogate: o-Terphenyl	10.8		"	12.5		86.6	30-150			

Matrix Spike Dup (BGC0416-MSD1)

Source: 2303333-05

Prepared: 03/14/23 Analyzed: 03/15/23

C10-C28 (DRO)	415	50	mg/kg	500	38.4	75.3	70-130	1.62	20	
Surrogate: o-Terphenyl	9.45		"	12.5		75.6	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BGC0416 - EPA 3550A

Matrix Spike Dup (BGC0416-MSD2)

Source: 2303333-02

Prepared: 03/14/23 Analyzed: 03/15/23

C10-C28 (DRO)	3340	50	mg/kg	500	2900	86.9	70-130	3.55	20	
Surrogate: o-Terphenyl	10.8		"	12.5		86.4	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0469 - EPA 5030 Soil MS

Blank (BGC0469-BLK1)

Prepared: 03/16/23 Analyzed: 03/18/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0242		"	0.0333		72.7	40-150			
Surrogate: Fluoranthene-d10	0.0396		"	0.0333		119	40-150			

LCS (BGC0469-BS1)

Prepared: 03/16/23 Analyzed: 03/18/23

Acenaphthene	0.0387	0.00500	mg/kg	0.0333	116	31-137	
Anthracene	0.0364	0.00500	"	0.0333	109	30-120	
Benzo (a) anthracene	0.0330	0.00500	"	0.0333	99.1	30-120	
Benzo (a) pyrene	0.0304	0.00500	"	0.0333	91.2	30-120	
Benzo (b) fluoranthene	0.0275	0.00500	"	0.0333	82.6	30-120	
Benzo (k) fluoranthene	0.0294	0.00500	"	0.0333	88.1	30-120	
Chrysene	0.0300	0.00500	"	0.0333	90.0	30-120	
Dibenz (a,h) anthracene	0.0235	0.00500	"	0.0333	70.6	30-120	
Fluoranthene	0.0382	0.00500	"	0.0333	115	30-120	
Fluorene	0.0375	0.00500	"	0.0333	113	30-120	
Indeno (1,2,3-cd) pyrene	0.0267	0.00500	"	0.0333	80.0	30-120	
Pyrene	0.0378	0.00500	"	0.0333	113	35-142	
1-Methylnaphthalene	0.0372	0.00500	"	0.0333	112	35-142	
2-Methylnaphthalene	0.0277	0.00500	"	0.0333	83.0	35-142	
Surrogate: 2-Methylnaphthalene-d10	0.0359		"	0.0333	108	40-150	
Surrogate: Fluoranthene-d10	0.0368		"	0.0333	110	40-150	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0469 - EPA 5030 Soil MS

Matrix Spike (BGC0469-MS1)

Source: 2303340-01

Prepared: 03/16/23 Analyzed: 03/18/23

Acenaphthene	0.0294	0.00500	mg/kg	0.0333	ND	88.3	31-137				
Anthracene	0.0333	0.00500	"	0.0333	ND	100	30-120				
Benzo (a) anthracene	0.0290	0.00500	"	0.0333	ND	86.9	30-120				
Benzo (a) pyrene	0.0247	0.00500	"	0.0333	ND	74.1	30-120				
Benzo (b) fluoranthene	0.0216	0.00500	"	0.0333	ND	64.8	30-120				
Benzo (k) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.4	30-120				
Chrysene	0.0214	0.00500	"	0.0333	ND	64.1	30-120				
Dibenz (a,h) anthracene	0.0208	0.00500	"	0.0333	ND	62.4	30-120				
Fluoranthene	0.0317	0.00500	"	0.0333	ND	95.1	30-120				
Fluorene	0.0293	0.00500	"	0.0333	ND	88.0	30-120				
Indeno (1,2,3-cd) pyrene	0.0227	0.00500	"	0.0333	ND	68.2	30-120				
Pyrene	0.0283	0.00500	"	0.0333	ND	84.8	35-142				
1-Methylnaphthalene	0.0291	0.00500	"	0.0333	ND	87.4	15-130				
2-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.1	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0365		"	0.0333		109	40-150				
Surrogate: Fluoranthene-d10	0.0368		"	0.0333		110	40-150				

Matrix Spike Dup (BGC0469-MSD1)

Source: 2303340-01

Prepared: 03/16/23 Analyzed: 03/18/23

Acenaphthene	0.0314	0.00500	mg/kg	0.0333	ND	94.3	31-137	6.64	30		
Anthracene	0.0348	0.00500	"	0.0333	ND	104	30-120	4.32	30		
Benzo (a) anthracene	0.0303	0.00500	"	0.0333	ND	90.8	30-120	4.31	30		
Benzo (a) pyrene	0.0252	0.00500	"	0.0333	ND	75.6	30-120	1.99	30		
Benzo (b) fluoranthene	0.0238	0.00500	"	0.0333	ND	71.5	30-120	9.87	30		
Benzo (k) fluoranthene	0.0235	0.00500	"	0.0333	ND	70.4	30-120	10.4	30		
Chrysene	0.0226	0.00500	"	0.0333	ND	67.7	30-120	5.33	30		
Dibenz (a,h) anthracene	0.0217	0.00500	"	0.0333	ND	65.0	30-120	4.16	30		
Fluoranthene	0.0333	0.00500	"	0.0333	ND	100	30-120	5.05	30		
Fluorene	0.0316	0.00500	"	0.0333	ND	94.8	30-120	7.49	30		
Indeno (1,2,3-cd) pyrene	0.0223	0.00500	"	0.0333	ND	66.8	30-120	2.08	30		
Pyrene	0.0296	0.00500	"	0.0333	ND	88.9	35-142	4.74	30		
1-Methylnaphthalene	0.0327	0.00500	"	0.0333	ND	98.2	15-130	11.7	50		
2-Methylnaphthalene	0.0254	0.00500	"	0.0333	ND	76.2	15-130	8.30	50		
Surrogate: 2-Methylnaphthalene-d10	0.0359		"	0.0333		108	40-150				
Surrogate: Fluoranthene-d10	0.0391		"	0.0333		117	40-150				

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0460 - EPA 3050B

Blank (BGC0460-BLK1)

Prepared: 03/15/23 Analyzed: 03/17/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGC0460-BS1)

Prepared: 03/15/23 Analyzed: 03/17/23

Arsenic	40.4	0.200	mg/kg wet	40.0	101	80-120
Barium	39.2	0.400	"	40.0	97.9	80-120
Selenium	3.83	0.260	"	4.00	95.7	80-120

Duplicate (BGC0460-DUP1)

Source: 2303284-01

Prepared: 03/15/23 Analyzed: 03/17/23

Arsenic	1.64	0.200	mg/kg dry	1.66	1.30	20
Barium	125	0.400	"	123	1.80	20
Selenium	0.313	0.260	"	0.311	0.780	20

Matrix Spike (BGC0460-MS1)

Source: 2303284-01

Prepared: 03/15/23 Analyzed: 03/17/23

Arsenic	47.0	0.200	mg/kg dry	44.4	1.66	102	75-125
Barium	164	0.400	"	44.4	123	93.2	75-125
Selenium	4.14	0.260	"	4.44	0.311	86.3	75-125

Matrix Spike Dup (BGC0460-MSD1)

Source: 2303284-01

Prepared: 03/15/23 Analyzed: 03/17/23

Arsenic	47.1	0.200	mg/kg dry	44.4	1.66	102	75-125	0.192	25
Barium	165	0.400	"	44.4	123	95.8	75-125	0.677	25
Selenium	4.61	0.260	"	4.44	0.311	97.0	75-125	10.8	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0626 - General Preparation

Duplicate (BGC0626-DUP1)

Source: 2303331-01

Prepared & Analyzed: 03/20/23

% Solids	78.2	%		78.3		0.0166	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/21/23 11:08

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0502 - General Preparation

LCS (BGC0502-BS1)

Prepared & Analyzed: 03/16/23

pH	9.25	pH Units	9.18	101	95-105
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Duplicate (BGC0502-DUP1)

Source: 2303340-01

Prepared & Analyzed: 03/16/23

pH	7.71	pH Units	7.42	3.83	20
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Summit Scientific

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PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/21/23 11:08

Notes and Definitions

QM-02	The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 22, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2303389

Enclosed are the results of analyses for samples received by Summit Scientific on 03/15/23 18:18. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

ANALYTICAL REPORT FOR SAMPLES

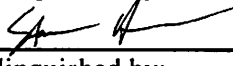

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS206@12'	2303389-01	Soil	03/15/23 09:28	03/15/23 18:18
SS207@8'	2303389-02	Soil	03/15/23 10:13	03/15/23 18:18
SS208@10'	2303389-03	Soil	03/15/23 10:17	03/15/23 18:18
SS209@12'	2303389-04	Soil	03/15/23 10:45	03/15/23 18:18
SS210@12'	2303389-05	Soil	03/15/23 15:16	03/15/23 18:18

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client: PDC / Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W 119th Ave		Project Manager: Mark Longhurst		Company: PDC Energy	
City/State/Zip: Broomfield / CO / 80220		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
Phone: 303-487-1228		Project Name: Warning 3,4-2 Tank Battery		AFE#:	
Sampler Name: S. Anderson		Project Number:		PO/Billing Codes:	
				Contact: Mark Longhurst	

					Preservative				Matrix			Analysis Requested							Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ★	PAHs ★	Metals ★	
1	SS206e12'	3/15/23	928	2			X			X			X	X	X		X	X	X	
2	SS207e8'	↓	1013	↓			↓			↓			↓	↓	↓		↓	↓	↓	
3	SS208e10'	↓	1017	↓			↓			↓			↓	↓	↓		↓	↓	↓	
4	SS209e12'	↓	1045	↓			↓			↓			↓	↓	↓		↓	↓	↓	
5	SS210e12'	↓	1516	↓			↓			↓			↓	↓	↓		↓	↓	↓	
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 3/15/23 1140	Received by: Tasman Lockbox	Date/Time: 3/15/23 1640	TAT Business Days	Field DO	Notes: * = pH only * = PAH's = chrysene, pyrene, fluorene, 1-m, 2-m. * = Metals = Arsenic, Barium, Selenium. * pH, PAH's and metals on 48 hour turn around.
Relinquished by: Tasman Lockbox	Date/Time: 3/15/23 1818	Received by: 	Date/Time: 3/15/23 1818	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt: 9.8	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 23033 89Client: For TasmanClient Project ID: Werning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #: _____

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

9.8

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on Ice
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Date/Time

3.15.23



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS206@12'
2303389-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/15/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0463	03/15/23	03/15/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/15/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/15/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0462	03/15/23	03/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/15/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		99.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS206@12'
2303389-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/15/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0513	03/17/23	03/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/15/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		107 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		81.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/15/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.251	0.200		mg/kg dry	1	BGC0464	03/15/23	03/18/23	EPA 6020B	
Barium	3.29	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/15/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	95.2			%	1	BGC0618	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/15/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/22/23 13:54

SS206@12'
2303389-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.54	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS207@8'
2303389-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/15/23 10:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0463	03/15/23	03/15/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/15/23 10:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/15/23 10:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0462	03/15/23	03/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/15/23 10:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		91.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS207@8'
2303389-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/15/23 10:13**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0513	03/17/23	03/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/15/23 10:13**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		97.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		68.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/15/23 10:13**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.628	0.200		mg/kg dry	1	BGC0464	03/15/23	03/18/23	EPA 6020B	
Barium	8.76	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/15/23 10:13**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.4			%	1	BGC0618	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/15/23 10:13**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS207@8'
2303389-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.20	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS208@10'
2303389-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/15/23 10:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0463	03/15/23	03/15/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/15/23 10:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		96.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/15/23 10:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0462	03/15/23	03/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/15/23 10:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		98.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS208@10'
2303389-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/15/23 10:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0513	03/17/23	03/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/15/23 10:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/15/23 10:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.249	0.200		mg/kg dry	1	BGC0464	03/15/23	03/18/23	EPA 6020B	
Barium	9.15	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/15/23 10:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8			%	1	BGC0618	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/15/23 10:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/22/23 13:54

SS208@10'
2303389-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.47	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS209@12'
2303389-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0463	03/15/23	03/15/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0462	03/15/23	03/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		109 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS209@12'
2303389-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0513	03/17/23	03/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		112 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.46	0.200		mg/kg dry	1	BGC0464	03/15/23	03/18/23	EPA 6020B	
Barium	72.3	0.400		"	"	"	"	"	"	
Selenium	0.472	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	73.9			%	1	BGC0618	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS209@12'
2303389-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.40	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS210@12'
2303389-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/15/23 15:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0463	03/15/23	03/15/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/15/23 15:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		94.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/15/23 15:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0462	03/15/23	03/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/15/23 15:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		99.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS210@12'
2303389-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/15/23 15:16**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0513	03/17/23	03/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/15/23 15:16**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		120 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		82.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/15/23 15:16**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.518	0.200		mg/kg dry	1	BGC0464	03/15/23	03/18/23	EPA 6020B	
Barium	4.82	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/15/23 15:16**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7			%	1	BGC0618	03/20/23	03/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/15/23 15:16**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

SS210@12'
2303389-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.47	pH Units	1	BGC0502	03/16/23	03/16/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0463 - EPA 5030 Soil MS

Blank (BGC0463-BLK1)

Prepared & Analyzed: 03/15/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0507		"	0.0400		127	50-150			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	50-150			

LCS (BGC0463-BS1)

Prepared & Analyzed: 03/15/23

Benzene	0.0845	0.0020	mg/kg	0.100		84.5	70-130			
Toluene	0.0753	0.0050	"	0.100		75.3	70-130			
Ethylbenzene	0.0930	0.0050	"	0.100		93.0	70-130			
m,p-Xylene	0.186	0.010	"	0.200		92.9	70-130			
o-Xylene	0.0891	0.0050	"	0.100		89.1	70-130			
1,2,4-Trimethylbenzene	0.0886	0.0050	"	0.100		88.6	70-130			
1,3,5-Trimethylbenzene	0.0907	0.0050	"	0.100		90.7	70-130			
Naphthalene	0.0739	0.0038	"	0.100		73.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0480		"	0.0400		120	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400		105	50-150			

Matrix Spike (BGC0463-MS1)

Source: 2303376-01

Prepared & Analyzed: 03/15/23

Benzene	0.0909	0.0020	mg/kg	0.100	ND	90.9	70-130			
Toluene	0.0761	0.0050	"	0.100	ND	76.1	70-130			
Ethylbenzene	0.0931	0.0050	"	0.100	ND	93.1	70-130			
m,p-Xylene	0.226	0.010	"	0.200	ND	113	70-130			
o-Xylene	0.0836	0.0050	"	0.100	ND	83.6	70-130			
1,2,4-Trimethylbenzene	0.114	0.0050	"	0.100	ND	114	70-130			
1,3,5-Trimethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130			
Naphthalene	0.0915	0.0038	"	0.100	ND	91.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0559		"	0.0400		140	50-150			
Surrogate: Toluene-d8	0.0357		"	0.0400		89.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0458		"	0.0400		114	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0463 - EPA 5030 Soil MS

Matrix Spike Dup (BGC0463-MSD1)	Source: 2303376-01			Prepared: 03/15/23 Analyzed: 03/16/23						
Benzene	0.0960	0.0020	mg/kg	0.100	ND	96.0	70-130	5.46	30	
Toluene	0.0710	0.0050	"	0.100	ND	71.0	70-130	6.93	30	
Ethylbenzene	0.0842	0.0050	"	0.100	ND	84.2	70-130	10.1	30	
m,p-Xylene	0.234	0.010	"	0.200	ND	117	70-130	3.34	30	
o-Xylene	0.0956	0.0050	"	0.100	ND	95.6	70-130	13.4	30	
1,2,4-Trimethylbenzene	0.0884	0.0050	"	0.100	ND	88.4	70-130	25.1	30	
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	4.15	30	
Naphthalene	0.0809	0.0038	"	0.100	ND	80.9	70-130	12.3	30	
Surrogate: 1,2-Dichloroethane-d4	0.0547		"	0.0400		137	50-150			
Surrogate: Toluene-d8	0.0345		"	0.0400		86.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0497		"	0.0400		124	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0462 - EPA 3550A

Blank (BGC0462-BLK1)

Prepared: 03/15/23 Analyzed: 03/16/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.3		"	12.5		82.2	30-150			

LCS (BGC0462-BS1)

Prepared: 03/15/23 Analyzed: 03/16/23

C10-C28 (DRO)	564	50	mg/kg	500		113	70-130			
Surrogate: o-Terphenyl	10.4		"	12.5		82.8	30-150			

Matrix Spike (BGC0462-MS1)

Source: 2303376-01

Prepared: 03/15/23 Analyzed: 03/16/23

C10-C28 (DRO)	543	50	mg/kg	500	13.2	106	70-130			
Surrogate: o-Terphenyl	10.2		"	12.5		81.3	30-150			

Matrix Spike Dup (BGC0462-MSD1)

Source: 2303376-01

Prepared: 03/15/23 Analyzed: 03/16/23

C10-C28 (DRO)	582	50	mg/kg	500	13.2	114	70-130	6.96	20	
Surrogate: o-Terphenyl	10.4		"	12.5		83.0	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0513 - EPA 5030 Soil MS

Blank (BGC0513-BLK1)

Prepared: 03/17/23 Analyzed: 03/20/23

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0362	"	0.0333	108	40-150
Surrogate: Fluoranthene-d10	0.0362	"	0.0333	108	40-150

LCS (BGC0513-BS1)

Prepared: 03/17/23 Analyzed: 03/20/23

Acenaphthene	0.0333	0.00500	mg/kg	0.0333	100	31-137
Anthracene	0.0328	0.00500	"	0.0333	98.3	30-120
Benzo (a) anthracene	0.0241	0.00500	"	0.0333	72.4	30-120
Benzo (a) pyrene	0.0327	0.00500	"	0.0333	98.1	30-120
Benzo (b) fluoranthene	0.0267	0.00500	"	0.0333	80.1	30-120
Benzo (k) fluoranthene	0.0371	0.00500	"	0.0333	111	30-120
Chrysene	0.0291	0.00500	"	0.0333	87.4	30-120
Dibenz (a,h) anthracene	0.0352	0.00500	"	0.0333	106	30-120
Fluoranthene	0.0286	0.00500	"	0.0333	85.8	30-120
Fluorene	0.0324	0.00500	"	0.0333	97.3	30-120
Indeno (1,2,3-cd) pyrene	0.0391	0.00500	"	0.0333	117	30-120
Pyrene	0.0329	0.00500	"	0.0333	98.8	35-142
1-Methylnaphthalene	0.0322	0.00500	"	0.0333	96.6	35-142
2-Methylnaphthalene	0.0318	0.00500	"	0.0333	95.5	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0402	"	0.0333	121	40-150
Surrogate: Fluoranthene-d10	0.0340	"	0.0333	102	40-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0513 - EPA 5030 Soil MS

Matrix Spike (BGC0513-MS1)

Source: 2303385-01

Prepared: 03/17/23 Analyzed: 03/20/23

Acenaphthene	0.0249	0.00500	mg/kg	0.0333	ND	74.8	31-137		
Anthracene	0.0240	0.00500	"	0.0333	ND	72.1	30-120		
Benzo (a) anthracene	0.0193	0.00500	"	0.0333	ND	57.8	30-120		
Benzo (a) pyrene	0.0223	0.00500	"	0.0333	ND	67.0	30-120		
Benzo (b) fluoranthene	0.0169	0.00500	"	0.0333	ND	50.6	30-120		
Benzo (k) fluoranthene	0.0239	0.00500	"	0.0333	ND	71.7	30-120		
Chrysene	0.0204	0.00500	"	0.0333	ND	61.2	30-120		
Dibenz (a,h) anthracene	0.0266	0.00500	"	0.0333	ND	79.7	30-120		
Fluoranthene	0.0249	0.00500	"	0.0333	ND	74.8	30-120		
Fluorene	0.0277	0.00500	"	0.0333	ND	83.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333	ND	79.7	30-120		
Pyrene	0.0260	0.00500	"	0.0333	ND	77.9	35-142		
1-Methylnaphthalene	0.0316	0.00500	"	0.0333	ND	94.7	15-130		
2-Methylnaphthalene	0.0320	0.00500	"	0.0333	ND	95.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0333		"	0.0333		100	40-150		
Surrogate: Fluoranthene-d10	0.0268		"	0.0333		80.3	40-150		

Matrix Spike Dup (BGC0513-MSD1)

Source: 2303385-01

Prepared: 03/17/23 Analyzed: 03/20/23

Acenaphthene	0.0242	0.00500	mg/kg	0.0333	ND	72.7	31-137	2.84	30
Anthracene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	4.06	30
Benzo (a) anthracene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	3.43	30
Benzo (a) pyrene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	0.262	30
Benzo (b) fluoranthene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	4.31	30
Benzo (k) fluoranthene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	3.21	30
Chrysene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	2.66	30
Dibenz (a,h) anthracene	0.0272	0.00500	"	0.0333	ND	81.7	30-120	2.46	30
Fluoranthene	0.0232	0.00500	"	0.0333	ND	69.5	30-120	7.32	30
Fluorene	0.0249	0.00500	"	0.0333	ND	74.8	30-120	10.5	30
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333	ND	79.9	30-120	0.233	30
Pyrene	0.0241	0.00500	"	0.0333	ND	72.4	35-142	7.37	30
1-Methylnaphthalene	0.0309	0.00500	"	0.0333	ND	92.8	15-130	2.03	50
2-Methylnaphthalene	0.0295	0.00500	"	0.0333	ND	88.5	15-130	8.03	50
Surrogate: 2-Methylnaphthalene-d10	0.0308		"	0.0333		92.4	40-150		
Surrogate: Fluoranthene-d10	0.0247		"	0.0333		74.0	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0464 - EPA 3050B

Blank (BGC0464-BLK1)

Prepared: 03/15/23 Analyzed: 03/18/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGC0464-BS1)

Prepared: 03/15/23 Analyzed: 03/18/23

Arsenic	39.8	0.200	mg/kg wet	40.0	99.4	80-120
Barium	39.5	0.400	"	40.0	98.8	80-120
Selenium	4.21	0.260	"	4.00	105	80-120

Duplicate (BGC0464-DUP1)

Source: 2303377-01

Prepared: 03/15/23 Analyzed: 03/18/23

Arsenic	2.86	0.200	mg/kg dry	3.23	12.0	20	QR-03
Barium	29.6	0.400	"	46.8	44.9	20	
Selenium	ND	0.260	"	ND		20	

Matrix Spike (BGC0464-MS1)

Source: 2303377-01

Prepared: 03/15/23 Analyzed: 03/18/23

Arsenic	45.9	0.200	mg/kg dry	44.5	3.23	95.8	75-125
Barium	81.9	0.400	"	44.5	46.8	78.9	75-125
Selenium	4.86	0.260	"	4.45	ND	109	75-125

Matrix Spike Dup (BGC0464-MSD1)

Source: 2303377-01

Prepared: 03/15/23 Analyzed: 03/18/23

Arsenic	45.8	0.200	mg/kg dry	44.5	3.23	95.7	75-125	0.165	25
Barium	82.4	0.400	"	44.5	46.8	80.1	75-125	0.654	25
Selenium	4.61	0.260	"	4.45	ND	104	75-125	5.25	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0618 - General Preparation

Duplicate (BGC0618-DUP1)

Source: 2303360-21

Prepared & Analyzed: 03/20/23

% Solids	97.9	%	97.8	0.0330	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/22/23 13:54

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0502 - General Preparation

LCS (BGC0502-BS1)

Prepared & Analyzed: 03/16/23

pH	9.25	pH Units	9.18	101	95-105
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Duplicate (BGC0502-DUP1)

Source: 2303340-01

Prepared & Analyzed: 03/16/23

pH	7.71	pH Units	7.42	3.83	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/22/23 13:54

Notes and Definitions

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 22, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2303441

Enclosed are the results of analyses for samples received by Summit Scientific on 03/16/23 17:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely". The signature is written in a cursive, flowing style. The background of the signature area is a light gray grid.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS211@10'	2303441-01	Soil	03/16/23 08:07	03/16/23 17:50
SS212@12'	2303441-02	Soil	03/16/23 08:25	03/16/23 17:50
SS213@8'	2303441-03	Soil	03/16/23 13:35	03/16/23 17:50
SS214@10'	2303441-04	Soil	03/16/23 13:39	03/16/23 17:50
SS215@12'	2303441-05	Soil	03/16/23 14:04	03/16/23 17:50
SS216@10'	2303441-06	Soil	03/16/23 14:43	03/16/23 17:50

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

		Send Data To:		Send Invoice To:	
Client:	PDC / Tasman	Project Manager:	Mark Longhurst	Company:	PDC Energy
Address:	6855 W 119th Ave	E-Mail:	mark.longhurst@PDCE.com	Project Name/Location:	
City/State/Zip:	Broomfield / CO / 80220			AFE#:	
Phone:	303-487-1228	Project Name:	Werning 3,4-2 Tank Battery	PO/Billing Codes:	
Sampler Name:	S. Anderson	Project Number:		Contact:	Mark Longhurst

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR ✕	PAHs ✕	Metals ✕			
1	SS211e 16'	3/16/23	907	2			X			X			X	X	X		X	X	X			
2	SS212e 12'		825																			
3	SS213e 8'		1335																			
4	SS214e 10'		1339																			
5	SS215e 12'		1404																			
6	SS216e 16'	↓	1443	↓			↓			↓			↓	↓	↓		↓	↓	↓			
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by:	Date/Time:	Received by:	Date/Time:	TAT Business Days	Field DO	Notes: * = pH only * = PAH's = chrysene, 2-fluore, fluorene 1-m, 2-m. * = Metals = Arsenic, Barium, Selenium. * pH, PAH's and metals on 2 day turn around.	
<i>[Signature]</i>	3/16/23 1607	Tasman Lathrop	3/16/23 1607	Same Day	X		Field EC
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day			Field ORP
<i>Tasman Lathrop</i>	3/16/23 1720	<i>[Signature]</i>	3/16/23 1730	2 Days			Field pH
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days			Field Temp.
				Standard		Field Turb.	
Temperature Upon Receipt:	8.3	Corrected Temperature:		IR gun #:	1	HNO3 lot #:	

S₂

Sample Receipt Checklist

S2 Work Order# 2303441Client: Boctasman Client Project ID: Werning 3,4-2 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.3Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>in ICE</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.


 Custodian Printed Name

3.16.23
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS211@10'
2303441-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/16/23 08:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0511	03/16/23	03/16/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/16/23 08:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		109 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/16/23 08:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0512	03/16/23	03/17/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/16/23 08:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		106 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS211@10'
2303441-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/16/23 08:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0513	03/17/23	03/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/16/23 08:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		52.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		86.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/16/23 08:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.49	0.200		mg/kg dry	1	BGC0508	03/16/23	03/19/23	EPA 6020B	
Barium	71.4	0.400		"	"	"	"	"	"	
Selenium	0.665	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/16/23 08:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.5			%	1	BGC0685	03/21/23	03/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/16/23 08:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/22/23 14:27

SS211@10'
2303441-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.89	pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS212@12'
2303441-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/16/23 08:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0511	03/16/23	03/16/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/16/23 08:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		110 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/16/23 08:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0512	03/16/23	03/17/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/16/23 08:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		140 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS212@12'
2303441-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/16/23 08:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0513	03/17/23	03/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/16/23 08:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		44.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/16/23 08:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.217	0.200		mg/kg dry	1	BGC0508	03/16/23	03/19/23	EPA 6020B	
Barium	70.1	0.400		"	"	"	"	"	"	
Selenium	0.999	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/16/23 08:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	76.1			%	1	BGC0685	03/21/23	03/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/16/23 08:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	03/22/23 14:27

SS212@12'
2303441-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.60	pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS213@8'
2303441-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/16/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0511	03/16/23	03/16/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/16/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		107 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/16/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0512	03/16/23	03/17/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/16/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		134 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS213@8'
2303441-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/16/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0513	03/17/23	03/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/16/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		45.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		73.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/16/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.638	0.200		mg/kg dry	1	BGC0508	03/16/23	03/19/23	EPA 6020B	
Barium	48.0	0.400		"	"	"	"	"	"	
Selenium	0.558	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/16/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.6			%	1	BGC0685	03/21/23	03/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/16/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS213@8'
2303441-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.60	pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS214@10'
2303441-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/16/23 13:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0511	03/16/23	03/16/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.037	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.023	0.0050		"	"	"	"	"	"	
Naphthalene	0.0053	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.3	0.50		"	"	"	"	"	"	

Date Sampled: **03/16/23 13:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/16/23 13:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0512	03/16/23	03/17/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/16/23 13:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		107 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS214@10'
2303441-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/16/23 13:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0513	03/17/23	03/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/16/23 13:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		57.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		81.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/16/23 13:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.510	0.200		mg/kg dry	1	BGC0508	03/16/23	03/19/23	EPA 6020B	
Barium	29.9	0.400		"	"	"	"	"	"	
Selenium	0.520	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/16/23 13:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.1			%	1	BGC0685	03/21/23	03/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/16/23 13:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS214@10'
2303441-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.49	pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS215@12'
2303441-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/16/23 14:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0511	03/16/23	03/16/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/16/23 14:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/16/23 14:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0512	03/16/23	03/17/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/16/23 14:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		84.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS215@12'
2303441-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/16/23 14:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0513	03/17/23	03/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/16/23 14:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		53.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		85.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/16/23 14:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGC0508	03/16/23	03/19/23	EPA 6020B	
Barium	8.31	0.400		"	"	"	"	"	"	
Selenium	0.294	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/16/23 14:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.9			%	1	BGC0685	03/21/23	03/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/16/23 14:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS215@12'
2303441-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.90	pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS216@10'
2303441-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/16/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0511	03/16/23	03/16/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/16/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		113 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/16/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0512	03/16/23	03/17/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/16/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		144 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS216@10'
2303441-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/16/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0513	03/17/23	03/20/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/16/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		44.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		73.8 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/16/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.47	0.200		mg/kg dry	1	BGC0508	03/16/23	03/19/23	EPA 6020B	
Barium	52.1	0.400		"	"	"	"	"	"	
Selenium	0.554	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/16/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.1			%	1	BGC0685	03/21/23	03/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/16/23 14:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

SS216@10'
2303441-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.30	pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0511 - EPA 5030 Soil MS

Blank (BGC0511-BLK1)

Prepared: 03/16/23 Analyzed: 03/17/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0471		"	0.0400		118	50-150			
Surrogate: Toluene-d8	0.0284		"	0.0400		70.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400		92.1	50-150			

Blank (BGC0511-BLK2)

Prepared: 03/16/23 Analyzed: 03/17/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0370		"	0.0400		92.6	50-150			
Surrogate: Toluene-d8	0.0442		"	0.0400		110	50-150			
Surrogate: 4-Bromofluorobenzene	0.0273		"	0.0400		68.2	50-150			

LCS (BGC0511-BS1)

Prepared: 03/16/23 Analyzed: 03/17/23

Benzene	0.0804	0.0020	mg/kg	0.100		80.4	70-130			
Toluene	0.0738	0.0050	"	0.100		73.8	70-130			
Ethylbenzene	0.0917	0.0050	"	0.100		91.7	70-130			
m,p-Xylene	0.185	0.010	"	0.200		92.4	70-130			
o-Xylene	0.0870	0.0050	"	0.100		87.0	70-130			
1,2,4-Trimethylbenzene	0.0824	0.0050	"	0.100		82.4	70-130			
1,3,5-Trimethylbenzene	0.0852	0.0050	"	0.100		85.2	70-130			
Naphthalene	0.0942	0.0038	"	0.100		94.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104	50-150			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0511 - EPA 5030 Soil MS

LCS (BGC0511-BS2)

Prepared: 03/16/23 Analyzed: 03/17/23

Benzene	0.0918	0.0020	mg/kg	0.100		91.8	70-130
Toluene	0.115	0.0050	"	0.100		115	70-130
Ethylbenzene	0.0713	0.0050	"	0.100		71.3	70-130
m,p-Xylene	0.145	0.010	"	0.200		72.5	70-130
o-Xylene	0.0985	0.0050	"	0.100		98.5	70-130
1,2,4-Trimethylbenzene	0.0830	0.0050	"	0.100		83.0	70-130
1,3,5-Trimethylbenzene	0.0709	0.0050	"	0.100		70.9	70-130
Naphthalene	0.0837	0.0038	"	0.100		83.7	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0484		"	0.0400		121	50-150
Surrogate: Toluene-d8	0.0569		"	0.0400		142	50-150
Surrogate: 4-Bromofluorobenzene	0.0447		"	0.0400		112	50-150

Matrix Spike (BGC0511-MS1)

Source: 2303440-01

Prepared: 03/16/23 Analyzed: 03/17/23

Benzene	0.0868	0.0020	mg/kg	0.100	ND	86.8	70-130
Toluene	0.0741	0.0050	"	0.100	ND	74.1	70-130
Ethylbenzene	0.0862	0.0050	"	0.100	ND	86.2	70-130
m,p-Xylene	0.165	0.010	"	0.200	ND	82.7	70-130
o-Xylene	0.0788	0.0050	"	0.100	ND	78.8	70-130
1,2,4-Trimethylbenzene	0.0790	0.0050	"	0.100	ND	79.0	70-130
1,3,5-Trimethylbenzene	0.0805	0.0050	"	0.100	ND	80.5	70-130
Naphthalene	0.0788	0.0038	"	0.100	ND	78.8	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0476		"	0.0400		119	50-150
Surrogate: Toluene-d8	0.0383		"	0.0400		95.7	50-150
Surrogate: 4-Bromofluorobenzene	0.0378		"	0.0400		94.4	50-150

Matrix Spike (BGC0511-MS2)

Source: 2303440-02

Prepared: 03/16/23 Analyzed: 03/17/23

Benzene	0.0914	0.0020	mg/kg	0.100	ND	91.4	70-130
Toluene	0.0742	0.0050	"	0.100	ND	74.2	70-130
Ethylbenzene	0.0940	0.0050	"	0.100	ND	94.0	70-130
m,p-Xylene	0.185	0.010	"	0.200	ND	92.7	70-130
o-Xylene	0.0898	0.0050	"	0.100	ND	89.8	70-130
1,2,4-Trimethylbenzene	0.0885	0.0050	"	0.100	ND	88.5	70-130
1,3,5-Trimethylbenzene	0.0899	0.0050	"	0.100	ND	89.9	70-130
Naphthalene	0.0798	0.0038	"	0.100	ND	79.8	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0470		"	0.0400		118	50-150
Surrogate: Toluene-d8	0.0375		"	0.0400		93.8	50-150
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	50-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0511 - EPA 5030 Soil MS

Matrix Spike Dup (BGC0511-MSD1)			Source: 2303440-01		Prepared: 03/16/23 Analyzed: 03/17/23					
Benzene	0.0976	0.0020	mg/kg	0.100	ND	97.6	70-130	11.7	30	
Toluene	0.0942	0.0050	"	0.100	ND	94.2	70-130	23.8	30	
Ethylbenzene	0.0810	0.0050	"	0.100	ND	81.0	70-130	6.32	30	
m,p-Xylene	0.182	0.010	"	0.200	ND	90.8	70-130	9.37	30	
o-Xylene	0.0788	0.0050	"	0.100	ND	78.8	70-130	0.0761	30	
1,2,4-Trimethylbenzene	0.0893	0.0050	"	0.100	ND	89.3	70-130	12.3	30	
1,3,5-Trimethylbenzene	0.0988	0.0050	"	0.100	ND	98.8	70-130	20.5	30	
Naphthalene	0.0794	0.0038	"	0.100	ND	79.4	70-130	0.797	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0516		"	0.0400		129	50-150			
Surrogate: Toluene-d8	0.0596		"	0.0400		149	50-150			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0400		91.1	50-150			

Matrix Spike Dup (BGC0511-MSD2)			Source: 2303440-02		Prepared: 03/16/23 Analyzed: 03/17/23					
Benzene	0.0767	0.0020	mg/kg	0.100	ND	76.7	70-130	17.6	30	
Toluene	0.0750	0.0050	"	0.100	ND	75.0	70-130	1.05	30	
Ethylbenzene	0.0750	0.0050	"	0.100	ND	75.0	70-130	22.4	30	
m,p-Xylene	0.154	0.010	"	0.200	ND	77.1	70-130	18.4	30	
o-Xylene	0.0973	0.0050	"	0.100	ND	97.3	70-130	8.02	30	
1,2,4-Trimethylbenzene	0.0942	0.0050	"	0.100	ND	94.2	70-130	6.24	30	
1,3,5-Trimethylbenzene	0.0954	0.0050	"	0.100	ND	95.4	70-130	5.93	30	
Naphthalene	0.0868	0.0038	"	0.100	ND	86.8	70-130	8.43	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0437		"	0.0400		109	50-150			
Surrogate: 4-Bromofluorobenzene	0.0465		"	0.0400		116	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0512 - EPA 3550A

Blank (BGC0512-BLK1)

Prepared: 03/16/23 Analyzed: 03/17/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	9.66		"	12.5		77.3	30-150			

Blank (BGC0512-BLK2)

Prepared: 03/16/23 Analyzed: 03/17/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.5		"	12.5		99.8	30-150			

LCS (BGC0512-BS1)

Prepared: 03/16/23 Analyzed: 03/17/23

C10-C28 (DRO)	463	50	mg/kg	500		92.6	70-130			
Surrogate: o-Terphenyl	14.0		"	12.5		112	30-150			

LCS (BGC0512-BS2)

Prepared: 03/16/23 Analyzed: 03/17/23

C10-C28 (DRO)	464	50	mg/kg	500		92.8	70-130			
Surrogate: o-Terphenyl	13.5		"	12.5		108	30-150			

Matrix Spike (BGC0512-MS1)

Source: 2303440-01

Prepared: 03/16/23 Analyzed: 03/17/23

C10-C28 (DRO)	463	50	mg/kg	500	25.7	87.5	70-130			
Surrogate: o-Terphenyl	9.94		"	12.5		79.5	30-150			

Matrix Spike (BGC0512-MS2)

Source: 2303440-02

Prepared: 03/16/23 Analyzed: 03/17/23

C10-C28 (DRO)	442	50	mg/kg	500	15.5	85.2	70-130			
Surrogate: o-Terphenyl	9.88		"	12.5		79.1	30-150			

Matrix Spike Dup (BGC0512-MSD1)

Source: 2303440-01

Prepared: 03/16/23 Analyzed: 03/17/23

C10-C28 (DRO)	431	50	mg/kg	500	25.7	81.1	70-130	7.11	20	
Surrogate: o-Terphenyl	10.5		"	12.5		84.0	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0512 - EPA 3550A

Matrix Spike Dup (BGC0512-MSD2)

Source: 2303440-02

Prepared: 03/16/23 Analyzed: 03/17/23

C10-C28 (DRO)	474	50	mg/kg	500	15.5	91.7	70-130	7.14	20	
Surrogate: o-Terphenyl	9.20		"	12.5		73.6	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0513 - EPA 5030 Soil MS

Blank (BGC0513-BLK1)

Prepared: 03/17/23 Analyzed: 03/20/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0362		"	0.0333		108	40-150			
Surrogate: Fluoranthene-d10	0.0362		"	0.0333		108	40-150			

LCS (BGC0513-BS1)

Prepared: 03/17/23 Analyzed: 03/20/23

Acenaphthene	0.0333	0.00500	mg/kg	0.0333	100	31-137	
Anthracene	0.0328	0.00500	"	0.0333	98.3	30-120	
Benzo (a) anthracene	0.0241	0.00500	"	0.0333	72.4	30-120	
Benzo (a) pyrene	0.0327	0.00500	"	0.0333	98.1	30-120	
Benzo (b) fluoranthene	0.0267	0.00500	"	0.0333	80.1	30-120	
Benzo (k) fluoranthene	0.0371	0.00500	"	0.0333	111	30-120	
Chrysene	0.0291	0.00500	"	0.0333	87.4	30-120	
Dibenz (a,h) anthracene	0.0352	0.00500	"	0.0333	106	30-120	
Fluoranthene	0.0286	0.00500	"	0.0333	85.8	30-120	
Fluorene	0.0324	0.00500	"	0.0333	97.3	30-120	
Indeno (1,2,3-cd) pyrene	0.0391	0.00500	"	0.0333	117	30-120	
Pyrene	0.0329	0.00500	"	0.0333	98.8	35-142	
1-Methylnaphthalene	0.0322	0.00500	"	0.0333	96.6	35-142	
2-Methylnaphthalene	0.0318	0.00500	"	0.0333	95.5	35-142	
Surrogate: 2-Methylnaphthalene-d10	0.0402		"	0.0333	121	40-150	
Surrogate: Fluoranthene-d10	0.0340		"	0.0333	102	40-150	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0513 - EPA 5030 Soil MS

Matrix Spike (BGC0513-MS1)

Source: 2303385-01

Prepared: 03/17/23 Analyzed: 03/20/23

Acenaphthene	0.0249	0.00500	mg/kg	0.0333	ND	74.8	31-137				
Anthracene	0.0240	0.00500	"	0.0333	ND	72.1	30-120				
Benzo (a) anthracene	0.0193	0.00500	"	0.0333	ND	57.8	30-120				
Benzo (a) pyrene	0.0223	0.00500	"	0.0333	ND	67.0	30-120				
Benzo (b) fluoranthene	0.0169	0.00500	"	0.0333	ND	50.6	30-120				
Benzo (k) fluoranthene	0.0239	0.00500	"	0.0333	ND	71.7	30-120				
Chrysene	0.0204	0.00500	"	0.0333	ND	61.2	30-120				
Dibenz (a,h) anthracene	0.0266	0.00500	"	0.0333	ND	79.7	30-120				
Fluoranthene	0.0249	0.00500	"	0.0333	ND	74.8	30-120				
Fluorene	0.0277	0.00500	"	0.0333	ND	83.1	30-120				
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333	ND	79.7	30-120				
Pyrene	0.0260	0.00500	"	0.0333	ND	77.9	35-142				
1-Methylnaphthalene	0.0316	0.00500	"	0.0333	ND	94.7	15-130				
2-Methylnaphthalene	0.0320	0.00500	"	0.0333	ND	95.9	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0333		"	0.0333		100	40-150				
Surrogate: Fluoranthene-d10	0.0268		"	0.0333		80.3	40-150				

Matrix Spike Dup (BGC0513-MSD1)

Source: 2303385-01

Prepared: 03/17/23 Analyzed: 03/20/23

Acenaphthene	0.0242	0.00500	mg/kg	0.0333	ND	72.7	31-137	2.84	30		
Anthracene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	4.06	30		
Benzo (a) anthracene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	3.43	30		
Benzo (a) pyrene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	0.262	30		
Benzo (b) fluoranthene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	4.31	30		
Benzo (k) fluoranthene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	3.21	30		
Chrysene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	2.66	30		
Dibenz (a,h) anthracene	0.0272	0.00500	"	0.0333	ND	81.7	30-120	2.46	30		
Fluoranthene	0.0232	0.00500	"	0.0333	ND	69.5	30-120	7.32	30		
Fluorene	0.0249	0.00500	"	0.0333	ND	74.8	30-120	10.5	30		
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333	ND	79.9	30-120	0.233	30		
Pyrene	0.0241	0.00500	"	0.0333	ND	72.4	35-142	7.37	30		
1-Methylnaphthalene	0.0309	0.00500	"	0.0333	ND	92.8	15-130	2.03	50		
2-Methylnaphthalene	0.0295	0.00500	"	0.0333	ND	88.5	15-130	8.03	50		
Surrogate: 2-Methylnaphthalene-d10	0.0308		"	0.0333		92.4	40-150				
Surrogate: Fluoranthene-d10	0.0247		"	0.0333		74.0	40-150				

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0508 - EPA 3050B

Blank (BGC0508-BLK1)

Prepared: 03/16/23 Analyzed: 03/19/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGC0508-BS1)

Prepared: 03/16/23 Analyzed: 03/19/23

Arsenic	40.7	0.200	mg/kg wet	40.0	102	80-120
Barium	39.5	0.400	"	40.0	98.7	80-120
Selenium	3.70	0.260	"	4.00	92.4	80-120

Duplicate (BGC0508-DUP1)

Source: 2303441-01

Prepared: 03/16/23 Analyzed: 03/19/23

Arsenic	1.48	0.200	mg/kg dry	1.49	0.447	20
Barium	74.6	0.400	"	71.4	4.29	20
Selenium	0.740	0.260	"	0.665	10.7	20

Matrix Spike (BGC0508-MS1)

Source: 2303441-01

Prepared: 03/16/23 Analyzed: 03/19/23

Arsenic	46.9	0.200	mg/kg dry	49.1	1.49	92.6	75-125
Barium	126	0.400	"	49.1	71.4	111	75-125
Selenium	4.56	0.260	"	4.91	0.665	79.3	75-125

Matrix Spike Dup (BGC0508-MSD1)

Source: 2303441-01

Prepared: 03/16/23 Analyzed: 03/19/23

Arsenic	48.2	0.200	mg/kg dry	49.1	1.49	95.3	75-125	2.83	25
Barium	128	0.400	"	49.1	71.4	115	75-125	1.40	25
Selenium	4.42	0.260	"	4.91	0.665	76.6	75-125	3.01	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0685 - General Preparation

Duplicate (BGC0685-DUP1)

Source: 2303428-01

Prepared & Analyzed: 03/21/23

% Solids	87.7	%	87.5	0.190	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0605 - General Preparation

LCS (BGC0605-BS1)

Prepared & Analyzed: 03/20/23

pH	9.21	pH Units	9.18	100	95-105
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Duplicate (BGC0605-DUP1)

Source: 2303441-01

Prepared & Analyzed: 03/20/23

pH	7.97	pH Units	7.89	1.01	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/22/23 14:27

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

April 04, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2303456

Enclosed are the results of analyses for samples received by Summit Scientific on 03/17/23 17:32. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

ANALYTICAL REPORT FOR SAMPLES

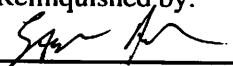

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS217@12'	2303456-01	Soil	03/17/23 07:40	03/17/23 17:32
SS218@8'	2303456-02	Soil	03/17/23 09:52	03/17/23 17:32
SS219@10'	2303456-03	Soil	03/17/23 09:58	03/17/23 17:32
SS220@10'	2303456-04	Soil	03/17/23 10:30	03/17/23 17:32
SS221@8'	2303456-05	Soil	03/17/23 11:51	03/17/23 17:32
SS222@10'	2303456-06	Soil	03/17/23 11:55	03/17/23 17:32
SS223@12'	2303456-07	Soil	03/17/23 11:59	03/17/23 17:32
SS224@10'	2303456-08	Soil	03/17/23 13:25	03/17/23 17:32
SS225@12'	2303456-09	Soil	03/17/23 13:29	03/17/23 17:32
SS226@10'	2303456-10	Soil	03/17/23 14:05	03/17/23 17:32
SS227@12'	2303456-11	Soil	03/17/23 14:10	03/17/23 17:32
SS228@2.5'	2303456-12	Soil	03/17/23 14:38	03/17/23 17:32

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Warning 3.4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix				Analysis Requested							Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR *	PAHs *	Metals *	
1	SS217e12'	3/17/23	740	2			X			X			X	X	X		X	X	X	
2	SS219e8'		952																	
3	SS219e10'		958																	
4	SS220e10'		1030																	
5	SS221e8'		1151																	
6	SS222e10'		1155																	
7	SS223e12'		1159																	
8	SS224e10'		1325																	
9	SS225e12'		1329																	
10	SS226e10'		1405																	
11	SS227e12'		1410	↓									↓	↓	↓		↓	↓	↓	
12	SS228e2.5'	↓	1438	1			↓			↓						X	X			
13																				* Boron, pH, EC and SAR on Standard turn around.
14																				
15																				

Relinquished by: 	Date/Time: 3/17/23 1601	Received by: Tasman Lockbox	Date/Time: 3/17/23 1601	TAT Business Days	Field DO	Notes: *pH only *PAHs = Chrysene, Pyrene, Fluoranthene, 1-m, 2-m. *Metals = Arsenic, Barium, Selenium. *pH, PAHs and metals on 2 day turn around.
Relinquished by: Tasman Lockbox	Date/Time: 3/17/23 1732	Received by: 	Date/Time: 3/17/23 1732	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day <input type="checkbox"/>	Field ORP	
				2 Days <input type="checkbox"/>	Field pH	
				3 Days <input type="checkbox"/>	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard <input type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: 10 - 0	Corrected Temperature: 0	IR gun #: 1	HNO3 lot #:			

2303456

Client: PRC | Tasman

Client Project ID:

Warning 3, 4-2 Tank Bottom

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

Matrix (Check all that apply)

Air

Soil/Solid

Water

Other

Temp ($^{\circ}\text{C}$)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature $< 6^{\circ}\text{C}$? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe^{2+}), Hexavalent Chromium (Cr^{6+} , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H_2SO_4 , NaOH, HNO_3 , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the $\text{pH} \leq 2$? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>Additional Comments (if any):</u>				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS217@12'
2303456-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/17/23 07:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0549	03/17/23	03/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/17/23 07:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/17/23 07:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0550	"	03/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/17/23 07:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		74.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS217@12'
2303456-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/17/23 07:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0598	03/20/23	03/21/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/17/23 07:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		92.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		81.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/17/23 07:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.523	0.200		mg/kg dry	1	BGC0585	03/19/23	03/20/23	EPA 6020B	
Barium	17.7	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 07:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.3			%	1	BGC0686	03/21/23	03/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 07:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	04/04/23 10:26

SS217@12'
2303456-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.42	pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS218@8'
2303456-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/17/23 09:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0549	03/17/23	03/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/17/23 09:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/17/23 09:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0550	"	03/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/17/23 09:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		75.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS218@8'
2303456-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/17/23 09:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0598	03/20/23	03/21/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/17/23 09:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		58.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		43.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/17/23 09:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.39	0.200		mg/kg dry	1	BGC0585	03/19/23	03/20/23	EPA 6020B	
Barium	87.4	0.400		"	"	"	"	"	"	
Selenium	0.347	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 09:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	74.4			%	1	BGC0686	03/21/23	03/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 09:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS218@8'
2303456-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	6.91	pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS219@10'
2303456-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/17/23 09:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0549	03/17/23	03/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/17/23 09:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/17/23 09:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0550	"	03/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/17/23 09:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		82.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS219@10'
2303456-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/17/23 09:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0598	03/20/23	03/21/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/17/23 09:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		81.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		75.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/17/23 09:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.329	0.200		mg/kg dry	1	BGC0585	03/19/23	03/20/23	EPA 6020B	
Barium	29.9	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 09:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.2			%	1	BGC0686	03/21/23	03/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 09:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	04/04/23 10:26

SS219@10'
2303456-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	6.09	pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS220@10'
2303456-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/17/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0549	03/17/23	03/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/17/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/17/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0550	"	03/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/17/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		82.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS220@10'
2303456-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/17/23 10:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0598	03/20/23	03/21/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/17/23 10:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		51.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.8 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/17/23 10:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGC0585	03/19/23	03/20/23	EPA 6020B	
Barium	3.15	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 10:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.5			%	1	BGC0686	03/21/23	03/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 10:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	04/04/23 10:26

SS220@10'
2303456-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.50	pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS221@8'
2303456-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/17/23 11:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0549	03/17/23	03/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/17/23 11:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/17/23 11:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0550	"	03/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/17/23 11:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		70.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS221@8'
2303456-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/17/23 11:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	0.00861	0.00500		mg/kg	1	BGC0598	03/20/23	03/21/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	0.0158	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/17/23 11:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		89.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.8 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/17/23 11:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.18	0.200		mg/kg dry	1	BGC0585	03/19/23	03/20/23	EPA 6020B	
Barium	75.2	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 11:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.8			%	1	BGC0686	03/21/23	03/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 11:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS221@8'
2303456-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.83	pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS222@10'
2303456-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/17/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0549	03/17/23	03/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/17/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/17/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0550	"	03/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/17/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		63.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS222@10'
2303456-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/17/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0598	03/20/23	03/21/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/17/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		88.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		71.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/17/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.253	0.200		mg/kg dry	1	BGC0585	03/19/23	03/20/23	EPA 6020B	
Barium	9.97	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.5			%	1	BGC0686	03/21/23	03/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	04/04/23 10:26

SS222@10'
2303456-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.74	pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS223@12'
2303456-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/17/23 11:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0549	03/17/23	03/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/17/23 11:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/17/23 11:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0550	"	03/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/17/23 11:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		83.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS223@12'
2303456-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/17/23 11:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0598	03/20/23	03/21/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/17/23 11:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		80.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/17/23 11:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	ND	0.200		mg/kg dry	1	BGC0585	03/19/23	03/20/23	EPA 6020B	
Barium	5.48	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 11:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.1			%	1	BGC0686	03/21/23	03/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 11:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	04/04/23 10:26

SS223@12'
2303456-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.74	pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS224@10'
2303456-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/17/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0549	03/17/23	03/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/17/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/17/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0550	"	03/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/17/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		91.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS224@10'
2303456-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/17/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chrysene	ND	0.00500		mg/kg	1	BGC0598	03/20/23	03/21/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/17/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		86.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		84.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/17/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.440	0.200		mg/kg dry	1	BGC0585	03/19/23	03/20/23	EPA 6020B	
Barium	7.80	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	86.8			%	1	BGC0686	03/21/23	03/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	04/04/23 10:26

SS224@10'
2303456-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.83	pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS225@12'
2303456-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/17/23 13:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0549	03/17/23	03/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/17/23 13:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		102 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/17/23 13:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0550	"	03/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/17/23 13:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		78.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS225@12'
2303456-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/17/23 13:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0598	03/20/23	03/21/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	0.00755	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/17/23 13:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		79.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/17/23 13:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.575	0.200		mg/kg dry	1	BGC0585	03/19/23	03/20/23	EPA 6020B	
Barium	6.99	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 13:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.1			%	1	BGC0686	03/21/23	03/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 13:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	04/04/23 10:26

SS225@12'
2303456-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.63	pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS226@10'
2303456-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/17/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0549	03/17/23	03/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/17/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/17/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0550	"	03/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/17/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		57.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS226@10'
2303456-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/17/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0598	03/20/23	03/21/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	0.00631	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/17/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		87.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/17/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.294	0.200		mg/kg dry	1	BGC0585	03/19/23	03/20/23	EPA 6020B	
Barium	4.80	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.6			%	1	BGC0686	03/21/23	03/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	04/04/23 10:26

SS226@10'
2303456-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.74	pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D
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Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS227@12'
2303456-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/17/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0549	03/17/23	03/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/17/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/17/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0550	"	03/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/17/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		72.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS227@12'
2303456-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/17/23 14:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGC0598	03/20/23	03/21/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	0.00601	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/17/23 14:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		70.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		65.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/17/23 14:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.490	0.200		mg/kg dry	1	BGC0585	03/19/23	03/20/23	EPA 6020B	
Barium	4.34	0.400		"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 14:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5			%	1	BGC0686	03/21/23	03/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 14:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	04/04/23 10:26

SS227@12'
2303456-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.06	pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS228@2.5'
2303456-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/17/23 14:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0397	0.0100		mg/L	1	BGC0724	03/21/23	03/24/23	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **03/17/23 14:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	14.4	0.0539		mg/L dry	1	BGC1026	03/30/23	04/01/23	EPA 6020B	
Magnesium	6.90	0.0539		"	"	"	"	"	"	
Sodium	10.5	0.0539		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/17/23 14:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Sodium Adsorption Ratio	0.570	0.00100		units	1	BGD0017	04/02/23	04/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/17/23 14:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.8			%	1	BGC0954	03/28/23	03/28/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/17/23 14:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.238	0.0100		mmhos/cm	1	BGC1061	03/31/23	03/31/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

SS228@2.5'
2303456-12 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/17/23 14:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.19			pH Units	1	BGC0745	03/22/23	03/22/23	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGC0549 - EPA 5030 Soil MS

Blank (BGC0549-BLK1)

Prepared: 03/17/23 Analyzed: 03/18/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0392		"	0.0400		98.1	50-150			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	50-150			

Blank (BGC0549-BLK2)

Prepared: 03/17/23 Analyzed: 03/18/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0424		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400		105	50-150			

LCS (BGC0549-BS1)

Prepared: 03/17/23 Analyzed: 03/18/23

Benzene	0.123	0.0020	mg/kg	0.125		98.1	70-130			
Toluene	0.0927	0.0050	"	0.125		74.2	70-130			
Ethylbenzene	0.147	0.0050	"	0.125		117	70-130			
m,p-Xylene	0.291	0.010	"	0.250		117	70-130			
o-Xylene	0.138	0.0050	"	0.125		110	70-130			
1,2,4-Trimethylbenzene	0.156	0.0050	"	0.125		124	70-130			
1,3,5-Trimethylbenzene	0.155	0.0050	"	0.125		124	70-130			
Naphthalene	0.142	0.0038	"	0.125		114	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.3	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0549 - EPA 5030 Soil MS

LCS (BGC0549-BS2)

Prepared: 03/17/23 Analyzed: 03/18/23

Benzene	0.122	0.0020	mg/kg	0.125		97.4	70-130			
Toluene	0.0928	0.0050	"	0.125		74.3	70-130			
Ethylbenzene	0.150	0.0050	"	0.125		120	70-130			
m,p-Xylene	0.298	0.010	"	0.250		119	70-130			
o-Xylene	0.140	0.0050	"	0.125		112	70-130			
1,2,4-Trimethylbenzene	0.159	0.0050	"	0.125		127	70-130			
1,3,5-Trimethylbenzene	0.157	0.0050	"	0.125		126	70-130			
Naphthalene	0.147	0.0038	"	0.125		118	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0409		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	50-150			

Matrix Spike (BGC0549-MS1)

Source: 2303454-01

Prepared: 03/17/23 Analyzed: 03/18/23

Benzene	0.122	0.0020	mg/kg	0.125	ND	97.8	70-130			
Toluene	0.0932	0.0050	"	0.125	ND	74.5	70-130			
Ethylbenzene	0.151	0.0050	"	0.125	ND	120	70-130			
m,p-Xylene	0.296	0.010	"	0.250	ND	118	70-130			
o-Xylene	0.141	0.0050	"	0.125	ND	113	70-130			
1,2,4-Trimethylbenzene	0.154	0.0050	"	0.125	ND	123	70-130			
1,3,5-Trimethylbenzene	0.158	0.0050	"	0.125	ND	126	70-130			
Naphthalene	0.158	0.0038	"	0.125	ND	127	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0418		"	0.0400		104	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.1	50-150			

Matrix Spike (BGC0549-MS2)

Source: 2303454-02

Prepared: 03/17/23 Analyzed: 03/18/23

Benzene	0.121	0.0020	mg/kg	0.125	ND	96.6	70-130			
Toluene	0.0916	0.0050	"	0.125	ND	73.3	70-130			
Ethylbenzene	0.149	0.0050	"	0.125	ND	119	70-130			
m,p-Xylene	0.295	0.010	"	0.250	ND	118	70-130			
o-Xylene	0.140	0.0050	"	0.125	ND	112	70-130			
1,2,4-Trimethylbenzene	0.163	0.0050	"	0.125	ND	130	70-130			
1,3,5-Trimethylbenzene	0.160	0.0050	"	0.125	ND	128	70-130			
Naphthalene	0.151	0.0038	"	0.125	ND	121	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0413		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0549 - EPA 5030 Soil MS

Matrix Spike Dup (BGC0549-MSD1)

Source: 2303454-01

Prepared: 03/17/23 Analyzed: 03/18/23

Benzene	0.123	0.0020	mg/kg	0.125	ND	98.2	70-130	0.367	30	
Toluene	0.0952	0.0050	"	0.125	ND	76.2	70-130	2.17	30	
Ethylbenzene	0.146	0.0050	"	0.125	ND	116	70-130	3.34	30	
m,p-Xylene	0.291	0.010	"	0.250	ND	116	70-130	1.69	30	
o-Xylene	0.139	0.0050	"	0.125	ND	111	70-130	1.52	30	
1,2,4-Trimethylbenzene	0.153	0.0050	"	0.125	ND	123	70-130	0.137	30	
1,3,5-Trimethylbenzene	0.155	0.0050	"	0.125	ND	124	70-130	1.99	30	
Naphthalene	0.154	0.0038	"	0.125	ND	123	70-130	2.72	30	
Surrogate: 1,2-Dichloroethane-d4	0.0427		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150			

Matrix Spike Dup (BGC0549-MSD2)

Source: 2303454-02

Prepared: 03/17/23 Analyzed: 03/18/23

Benzene	0.148	0.0020	mg/kg	0.125	ND	118	70-130	20.2	30	
Toluene	0.0885	0.0050	"	0.125	ND	70.8	70-130	3.46	30	
Ethylbenzene	0.141	0.0050	"	0.125	ND	113	70-130	5.48	30	
m,p-Xylene	0.287	0.010	"	0.250	ND	115	70-130	2.76	30	
o-Xylene	0.138	0.0050	"	0.125	ND	110	70-130	1.96	30	
1,2,4-Trimethylbenzene	0.156	0.0050	"	0.125	ND	125	70-130	4.41	30	
1,3,5-Trimethylbenzene	0.153	0.0050	"	0.125	ND	123	70-130	4.38	30	
Naphthalene	0.153	0.0038	"	0.125	ND	123	70-130	1.22	30	
Surrogate: 1,2-Dichloroethane-d4	0.0427		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0550 - EPA 3550A

Blank (BGC0550-BLK1)

Prepared: 03/17/23 Analyzed: 03/18/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	8.92		"	12.5		71.4	30-150			

Blank (BGC0550-BLK2)

Prepared: 03/17/23 Analyzed: 03/18/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.3		"	12.5		90.4	30-150			

LCS (BGC0550-BS1)

Prepared: 03/17/23 Analyzed: 03/18/23

C10-C28 (DRO)	472	50	mg/kg	500		94.4	70-130			
Surrogate: o-Terphenyl	8.52		"	12.5		68.2	30-150			

LCS (BGC0550-BS2)

Prepared: 03/17/23 Analyzed: 03/18/23

C10-C28 (DRO)	479	50	mg/kg	500		95.9	70-130			
Surrogate: o-Terphenyl	8.31		"	12.5		66.5	30-150			

Matrix Spike (BGC0550-MS1)

Source: 2303454-01

Prepared: 03/17/23 Analyzed: 03/18/23

C10-C28 (DRO)	470	50	mg/kg	500	26.0	88.7	70-130			
Surrogate: o-Terphenyl	10.7		"	12.5		85.3	30-150			

Matrix Spike (BGC0550-MS2)

Source: 2303454-02

Prepared: 03/17/23 Analyzed: 03/18/23

C10-C28 (DRO)	411	50	mg/kg	500	27.1	76.7	70-130			
Surrogate: o-Terphenyl	12.0		"	12.5		96.4	30-150			

Matrix Spike Dup (BGC0550-MSD1)

Source: 2303454-01

Prepared: 03/17/23 Analyzed: 03/18/23

C10-C28 (DRO)	422	50	mg/kg	500	26.0	79.2	70-130	10.6	20	
Surrogate: o-Terphenyl	11.7		"	12.5		93.7	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0550 - EPA 3550A

Matrix Spike Dup (BGC0550-MSD2)


Source: 2303454-02

Prepared: 03/17/23 Analyzed: 03/18/23

C10-C28 (DRO)	435	50	mg/kg	500	27.1	81.5	70-130	5.74	20	
Surrogate: o-Terphenyl	11.5		"	12.5		92.3	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result		%REC	Limits	RPD	Limit
Notes											

Batch BGC0598 - EPA 5030 Soil MS

Blank (BGC0598-BLK1)

Prepared & Analyzed: 03/20/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0316		"	0.0333		94.8		40-150			
Surrogate: Fluoranthene-d10	0.0289		"	0.0333		86.6		40-150			

LCS (BGC0598-BS1)

Prepared & Analyzed: 03/20/23

Acenaphthene	0.0350	0.00500	mg/kg	0.0333		105		31-137			
Anthracene	0.0348	0.00500	"	0.0333		104		30-120			
Benzo (a) anthracene	0.0190	0.00500	"	0.0333		57.1		30-120			
Benzo (a) pyrene	0.0271	0.00500	"	0.0333		81.2		30-120			
Benzo (b) fluoranthene	0.0143	0.00500	"	0.0333		42.9		30-120			
Benzo (k) fluoranthene	0.0348	0.00500	"	0.0333		104		30-120			
Chrysene	0.0340	0.00500	"	0.0333		102		30-120			
Dibenz (a,h) anthracene	0.0267	0.00500	"	0.0333		80.1		30-120			
Fluoranthene	0.0310	0.00500	"	0.0333		92.9		30-120			
Fluorene	0.0283	0.00500	"	0.0333		84.9		30-120			
Indeno (1,2,3-cd) pyrene	0.0257	0.00500	"	0.0333		77.0		30-120			
Pyrene	0.0442	0.00500	"	0.0333		133		35-142			
1-Methylnaphthalene	0.0317	0.00500	"	0.0333		95.1		35-142			
2-Methylnaphthalene	0.0376	0.00500	"	0.0333		113		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0376		"	0.0333		113		40-150			
Surrogate: Fluoranthene-d10	0.0321		"	0.0333		96.2		40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0598 - EPA 5030 Soil MS

Matrix Spike (BGC0598-MS1)

Source: 2303455-01

Prepared & Analyzed: 03/20/23

Acenaphthene	0.0217	0.00500	mg/kg	0.0333	ND	65.1	31-137				
Anthracene	0.0226	0.00500	"	0.0333	ND	67.7	30-120				
Benzo (a) anthracene	0.0151	0.00500	"	0.0333	ND	45.3	30-120				
Benzo (a) pyrene	0.0217	0.00500	"	0.0333	ND	65.1	30-120				
Benzo (b) fluoranthene	0.0149	0.00500	"	0.0333	ND	44.6	30-120				
Benzo (k) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.5	30-120				
Chrysene	0.0212	0.00500	"	0.0333	ND	63.7	30-120				
Dibenz (a,h) anthracene	0.0182	0.00500	"	0.0333	ND	54.5	30-120				
Fluoranthene	0.0227	0.00500	"	0.0333	ND	68.0	30-120				
Fluorene	0.0202	0.00500	"	0.0333	ND	60.7	30-120				
Indeno (1,2,3-cd) pyrene	0.0143	0.00500	"	0.0333	ND	43.0	30-120				
Pyrene	0.0277	0.00500	"	0.0333	ND	83.2	35-142				
1-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.0	15-130				
2-Methylnaphthalene	0.0214	0.00500	"	0.0333	ND	64.3	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0272		"	0.0333		81.7	40-150				
Surrogate: Fluoranthene-d10	0.0237		"	0.0333		71.2	40-150				

Matrix Spike Dup (BGC0598-MSD1)

Source: 2303455-01

Prepared & Analyzed: 03/20/23

Acenaphthene	0.0207	0.00500	mg/kg	0.0333	ND	62.1	31-137	4.84	30		
Anthracene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	12.7	30		
Benzo (a) anthracene	0.0175	0.00500	"	0.0333	ND	52.6	30-120	14.9	30		
Benzo (a) pyrene	0.0241	0.00500	"	0.0333	ND	72.3	30-120	10.4	30		
Benzo (b) fluoranthene	0.0150	0.00500	"	0.0333	ND	44.9	30-120	0.773	30		
Benzo (k) fluoranthene	0.0252	0.00500	"	0.0333	ND	75.7	30-120	4.91	30		
Chrysene	0.0230	0.00500	"	0.0333	ND	69.1	30-120	8.12	30		
Dibenz (a,h) anthracene	0.0168	0.00500	"	0.0333	ND	50.4	30-120	7.80	30		
Fluoranthene	0.0248	0.00500	"	0.0333	ND	74.3	30-120	8.85	30		
Fluorene	0.0203	0.00500	"	0.0333	ND	60.8	30-120	0.110	30		
Indeno (1,2,3-cd) pyrene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	18.7	30		
Pyrene	0.0282	0.00500	"	0.0333	ND	84.6	35-142	1.69	30		
1-Methylnaphthalene	0.0221	0.00500	"	0.0333	ND	66.2	15-130	1.31	50		
2-Methylnaphthalene	0.0204	0.00500	"	0.0333	ND	61.3	15-130	4.72	50		
Surrogate: 2-Methylnaphthalene-d10	0.0270		"	0.0333		81.0	40-150				
Surrogate: Fluoranthene-d10	0.0259		"	0.0333		77.8	40-150				

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0724 - EPA 3050B

Blank (BGC0724-BLK1)

Prepared: 03/21/23 Analyzed: 03/23/23

Boron ND 0.0100 mg/L

LCS (BGC0724-BS1)

Prepared: 03/21/23 Analyzed: 03/23/23

Boron 5.32 0.0100 mg/L 5.00 106 80-120

Duplicate (BGC0724-DUP1)

Source: 2303453-14

Prepared: 03/21/23 Analyzed: 03/23/23

Boron 0.0836 0.0100 mg/L 0.0882 5.33 20

Matrix Spike (BGC0724-MS1)

Source: 2303453-14

Prepared: 03/21/23 Analyzed: 03/23/23

Boron 5.25 0.0100 mg/L 5.00 0.0882 103 75-125

Matrix Spike Dup (BGC0724-MSD1)

Source: 2303453-14

Prepared: 03/21/23 Analyzed: 03/23/23

Boron 5.30 0.0100 mg/L 5.00 0.0882 104 75-125 1.04 25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0585 - EPA 3050B

Blank (BGC0585-BLK1)

Prepared: 03/19/23 Analyzed: 03/20/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGC0585-BS1)

Prepared: 03/19/23 Analyzed: 03/20/23

Arsenic	38.3	0.200	mg/kg wet	40.0	95.8	80-120
Barium	37.6	0.400	"	40.0	94.1	80-120
Selenium	3.67	0.260	"	4.00	91.8	80-120

Duplicate (BGC0585-DUP1)

Source: 2303455-01

Prepared: 03/19/23 Analyzed: 03/20/23

Arsenic	1.34	0.200	mg/kg dry	1.38	2.77	20	QR-04
Barium	57.1	0.400	"	34.3	49.8	20	
Selenium	ND	0.260	"	ND		20	

Matrix Spike (BGC0585-MS1)

Source: 2303455-01

Prepared: 03/19/23 Analyzed: 03/20/23

Arsenic	44.6	0.200	mg/kg dry	48.2	1.38	89.8	75-125
Barium	83.9	0.400	"	48.2	34.3	103	75-125
Selenium	3.67	0.260	"	4.82	ND	76.1	75-125

Matrix Spike Dup (BGC0585-MSD1)

Source: 2303455-01

Prepared: 03/19/23 Analyzed: 03/20/23

Arsenic	44.3	0.200	mg/kg dry	48.2	1.38	89.2	75-125	0.685	25
Barium	84.1	0.400	"	48.2	34.3	103	75-125	0.195	25
Selenium	3.67	0.260	"	4.82	ND	76.3	75-125	0.210	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC1026 - General Preparation

Blank (BGC1026-BLK1)

Prepared: 03/30/23 Analyzed: 04/01/23

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BGC1026-BS1)

Prepared: 03/30/23 Analyzed: 04/01/23

Calcium	4.86	0.0500	mg/L wet	5.00	97.2	70-130
Magnesium	4.91	0.0500	"	5.00	98.2	70-130
Sodium	4.88	0.0500	"	5.00	97.6	70-130

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Result	Reporting			Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BGC0686 - General Preparation

Duplicate (BGC0686-DUP1)		Source: 2303455-01			Prepared: 03/21/23 Analyzed: 03/22/23						
% Solids	82.2		%		83.0			0.969		20	

Batch BGC0954 - General Preparation

Duplicate (BGC0954-DUP1)		Source: 2303456-12			Prepared & Analyzed: 03/28/23						
% Solids	93.0		%		92.8			0.277		20	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting			Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BGC1061 - General Preparation

Blank (BGC1061-BLK1)

Prepared & Analyzed: 03/31/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGC1061-BS1)

Prepared & Analyzed: 03/31/23

Specific Conductance (EC) 0.150 0.0100 mmhos/cm 0.150 100 95-105

Duplicate (BGC1061-DUP1)

Source: 2303456-12

Prepared & Analyzed: 03/31/23

Specific Conductance (EC) 0.228 0.0100 mmhos/cm 0.238 4.17 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/04/23 10:26

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC0745 - General Preparation

LCS (BGC0745-BS1)

Prepared & Analyzed: 03/22/23

pH	9.17	pH Units	9.18	99.9	95-105
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Duplicate (BGC0745-DUP1)

Source: 2302482-14

Prepared & Analyzed: 03/22/23

pH	7.25	pH Units	7.68	5.76	20
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Summit Scientific

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PDC Energy

1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

04/04/23 10:26

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

April 05, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Werning 3, 4-2 Tank Battery

Work Order # 2303718

Enclosed are the results of analyses for samples received by Summit Scientific on 03/30/23 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS229@10'	2303718-01	Soil	03/30/23 13:44	03/30/23 17:30
SS230@12'	2303718-02	Soil	03/30/23 13:50	03/30/23 17:30

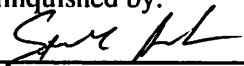


Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Client: PDC / Tasman		Send Data To: Project Manager: Mark Longhurst		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Werning 3.4-2 Tank Battery		PO/Billing Codes:	
Sampler Name: S. Anderson		Project Number:		Contact: Mark Longhurst	

					Preservative				Matrix			Analysis Requested							Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR [⚡]	PAHs [⚡]	Metals [⚡]		
1	SS229 E 10'	3/30/23	1344	2			X			X			X	X	X		X	X	X		
2	SS230 E 12'	↓	1350	↓			↓			↓			↓	↓	↓		↓	↓	↓		
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 3/30/23 1521	Received by: Tasman lockbox	Date/Time: 3/30/23 1521	TAT Business Days	Field DO	Notes: * = PAH only * = PAH's = chrysene, Benzo, fluorene, 1-m, 2-m * = Metals = Arsenic, Barium, Selenium. * pH, PAH's and metals on 2 day was around
Relinquished by: Tasman lockbox	Date/Time: 33023 1730	Received by: 	Date/Time: 33023 1730	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 10.3	Corrected Temperature: 	IR gun #: 1	HNO3 lot #:	Standard	Field Turb.	

S₂

3/3

Sample Receipt Checklist

S2 Work Order# 2303718Client: Cintasfasman Client Project ID: Wise 1-14xShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☒ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 9.6Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ice</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>same day</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

3-30-23
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

SS229@10'
2303718-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/30/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC1027	03/30/23	03/30/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/30/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		116 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		83.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/30/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC1030	"	03/30/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/30/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		90.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

SS229@10'
2303718-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/30/23 13:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGD0001	04/01/23	04/02/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/30/23 13:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		77.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/30/23 13:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGC1033	03/30/23	04/02/23	EPA 6020B	
Barium	7.00	0.400		"	"	"	"	"	"	
Selenium	0.328	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/30/23 13:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.2			%	1	BGC1042	03/31/23	03/31/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/30/23 13:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

SS229@10'
2303718-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.32	pH Units	1	BGC1067	03/31/23	03/31/23	EPA 9045D
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Summit Scientific



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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

SS230@12'
2303718-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/30/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC1027	03/30/23	03/30/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/30/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		118 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		82.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/30/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC1030	"	03/30/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/30/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		96.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

SS230@12'
2303718-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/30/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500		mg/kg	1	BGD0001	04/01/23	04/02/23	EPA 8270D SIM	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/30/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		69.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **03/30/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	0.200		mg/kg dry	1	BGC1033	03/30/23	04/02/23	EPA 6020B	
Barium	7.61	0.400		"	"	"	"	"	"	
Selenium	0.314	0.260	0.175	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/30/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.3			%	1	BGC1042	03/31/23	03/31/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **03/30/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy	Project: Werning 3, 4-2 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	Reported:
Denver CO, 80203	Project Manager: Mark Longhurst	04/05/23 13:29

SS230@12'
2303718-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.46	pH Units	1	BGC1067	03/31/23	03/31/23	EPA 9045D
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC1027 - EPA 5030 Soil MS

Blank (BGC1027-BLK1)

Prepared: 03/30/23 Analyzed: 03/31/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.5	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	50-150			

LCS (BGC1027-BS1)

Prepared: 03/30/23 Analyzed: 03/31/23

Benzene	0.0830	0.0020	mg/kg	0.100		83.0	70-130			
Toluene	0.0867	0.0050	"	0.100		86.7	70-130			
Ethylbenzene	0.0975	0.0050	"	0.100		97.5	70-130			
m,p-Xylene	0.188	0.010	"	0.200		93.9	70-130			
o-Xylene	0.0945	0.0050	"	0.100		94.5	70-130			
1,2,4-Trimethylbenzene	0.0953	0.0050	"	0.100		95.3	70-130			
1,3,5-Trimethylbenzene	0.0975	0.0050	"	0.100		97.5	70-130			
Naphthalene	0.0980	0.0038	"	0.100		98.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0355		"	0.0400		88.7	50-150			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		97.9	50-150			

Matrix Spike (BGC1027-MS1)

Source: 2303716-01

Prepared: 03/30/23 Analyzed: 03/31/23

Benzene	0.0786	0.0020	mg/kg	0.100	ND	78.6	70-130			
Toluene	0.0831	0.0050	"	0.100	ND	83.1	70-130			
Ethylbenzene	0.0965	0.0050	"	0.100	ND	96.5	70-130			
m,p-Xylene	0.187	0.010	"	0.200	ND	93.3	70-130			
o-Xylene	0.0934	0.0050	"	0.100	ND	93.4	70-130			
1,2,4-Trimethylbenzene	0.0937	0.0050	"	0.100	ND	93.7	70-130			
1,3,5-Trimethylbenzene	0.0954	0.0050	"	0.100	ND	95.4	70-130			
Naphthalene	0.103	0.0038	"	0.100	ND	103	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0346		"	0.0400		86.6	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC1027 - EPA 5030 Soil MS

Matrix Spike Dup (BGC1027-MSD1)	Source: 2303716-01			Prepared: 03/30/23 Analyzed: 03/31/23						
Benzene	0.0775	0.0020	mg/kg	0.100	ND	77.5	70-130	1.38	30	
Toluene	0.0812	0.0050	"	0.100	ND	81.2	70-130	2.34	30	
Ethylbenzene	0.0969	0.0050	"	0.100	ND	96.9	70-130	0.403	30	
m,p-Xylene	0.184	0.010	"	0.200	ND	92.0	70-130	1.36	30	
o-Xylene	0.0921	0.0050	"	0.100	ND	92.1	70-130	1.39	30	
1,2,4-Trimethylbenzene	0.0940	0.0050	"	0.100	ND	94.0	70-130	0.288	30	
1,3,5-Trimethylbenzene	0.0950	0.0050	"	0.100	ND	95.0	70-130	0.410	30	
Naphthalene	0.105	0.0038	"	0.100	ND	105	70-130	1.53	30	
Surrogate: 1,2-Dichloroethane-d4	0.0346		"	0.0400		86.6	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.1	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC1030 - EPA 3550A

Blank (BGC1030-BLK1)

Prepared: 03/30/23 Analyzed: 03/31/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.8		"	12.5		103	30-150			

LCS (BGC1030-BS1)

Prepared: 03/30/23 Analyzed: 03/31/23

C10-C28 (DRO)	503	50	mg/kg	500		101	70-130			
Surrogate: o-Terphenyl	12.4		"	12.5		98.9	30-150			

Matrix Spike (BGC1030-MS1)

Source: 2303716-01

Prepared: 03/30/23 Analyzed: 03/31/23

C10-C28 (DRO)	462	50	mg/kg	500	11.2	90.2	70-130			
Surrogate: o-Terphenyl	11.3		"	12.5		90.1	30-150			

Matrix Spike Dup (BGC1030-MSD1)

Source: 2303716-01

Prepared: 03/30/23 Analyzed: 03/31/23

C10-C28 (DRO)	495	50	mg/kg	500	11.2	96.8	70-130	6.88	20	
Surrogate: o-Terphenyl	11.9		"	12.5		95.5	30-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result		%REC	Limits	RPD	Limit

Batch BGD0001 - EPA 5030 Soil MS

Blank (BGD0001-BLK1)

Prepared: 04/01/23 Analyzed: 04/02/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0320		"	0.0333		96.1		40-150			
Surrogate: Fluoranthene-d10	0.0239		"	0.0333		71.7		40-150			

LCS (BGD0001-BS1)

Prepared: 04/01/23 Analyzed: 04/02/23

Acenaphthene	0.0292	0.00500	mg/kg	0.0333		87.5		31-137			
Anthracene	0.0257	0.00500	"	0.0333		77.2		30-120			
Benzo (a) anthracene	0.0235	0.00500	"	0.0333		70.6		30-120			
Benzo (a) pyrene	0.0256	0.00500	"	0.0333		76.7		30-120			
Benzo (b) fluoranthene	0.0265	0.00500	"	0.0333		79.6		30-120			
Benzo (k) fluoranthene	0.0335	0.00500	"	0.0333		100		30-120			
Chrysene	0.0196	0.00500	"	0.0333		58.7		30-120			
Dibenz (a,h) anthracene	0.0282	0.00500	"	0.0333		84.6		30-120			
Fluoranthene	0.0253	0.00500	"	0.0333		75.9		30-120			
Fluorene	0.0281	0.00500	"	0.0333		84.3		30-120			
Indeno (1,2,3-cd) pyrene	0.0254	0.00500	"	0.0333		76.2		30-120			
Pyrene	0.0296	0.00500	"	0.0333		88.9		35-142			
1-Methylnaphthalene	0.0279	0.00500	"	0.0333		83.6		35-142			
2-Methylnaphthalene	0.0277	0.00500	"	0.0333		83.0		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0307		"	0.0333		92.1		40-150			
Surrogate: Fluoranthene-d10	0.0294		"	0.0333		88.3		40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGD0001 - EPA 5030 Soil MS

Matrix Spike (BGD0001-MS1)

Source: 2303613-03

Prepared: 04/01/23 Analyzed: 04/02/23

Acenaphthene	0.0138	0.00500	mg/kg	0.0333	ND	41.3	31-137		
Anthracene	0.0157	0.00500	"	0.0333	ND	47.2	30-120		
Benzo (a) anthracene	0.0147	0.00500	"	0.0333	ND	44.2	30-120		
Benzo (a) pyrene	0.0156	0.00500	"	0.0333	ND	46.9	30-120		
Benzo (b) fluoranthene	0.0147	0.00500	"	0.0333	ND	44.0	30-120		
Benzo (k) fluoranthene	0.0180	0.00500	"	0.0333	ND	53.9	30-120		
Chrysene	0.0125	0.00500	"	0.0333	ND	37.4	30-120		
Dibenz (a,h) anthracene	0.0203	0.00500	"	0.0333	ND	60.8	30-120		
Fluoranthene	0.0174	0.00500	"	0.0333	ND	52.2	30-120		
Fluorene	0.0130	0.00500	"	0.0333	ND	39.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0150	0.00500	"	0.0333	ND	44.9	30-120		
Pyrene	0.0198	0.00500	"	0.0333	ND	59.3	35-142		
1-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.3	15-130		
2-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	45.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0170		"	0.0333		50.9	40-150		
Surrogate: Fluoranthene-d10	0.0181		"	0.0333		54.2	40-150		

Matrix Spike Dup (BGD0001-MSD1)

Source: 2303613-03

Prepared: 04/01/23 Analyzed: 04/02/23

Acenaphthene	0.0183	0.00500	mg/kg	0.0333	ND	54.9	31-137	28.2	30
Anthracene	0.0193	0.00500	"	0.0333	ND	58.0	30-120	20.6	30
Benzo (a) anthracene	0.0175	0.00500	"	0.0333	ND	52.6	30-120	17.3	30
Benzo (a) pyrene	0.0172	0.00500	"	0.0333	ND	51.7	30-120	9.63	30
Benzo (b) fluoranthene	0.0178	0.00500	"	0.0333	ND	53.5	30-120	19.6	30
Benzo (k) fluoranthene	0.0223	0.00500	"	0.0333	ND	66.8	30-120	21.4	30
Chrysene	0.0143	0.00500	"	0.0333	ND	42.9	30-120	13.6	30
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333	ND	59.2	30-120	2.73	30
Fluoranthene	0.0192	0.00500	"	0.0333	ND	57.6	30-120	9.76	30
Fluorene	0.0193	0.00500	"	0.0333	ND	58.0	30-120	39.1	30
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.4	30-120	3.08	30
Pyrene	0.0221	0.00500	"	0.0333	ND	66.3	35-142	11.2	30
1-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.4	15-130	18.3	50
2-Methylnaphthalene	0.0199	0.00500	"	0.0333	ND	59.7	15-130	26.2	50
Surrogate: 2-Methylnaphthalene-d10	0.0223		"	0.0333		66.9	40-150		
Surrogate: Fluoranthene-d10	0.0212		"	0.0333		63.5	40-150		

QR-02

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGC1033 - EPA 3050B

Blank (BGC1033-BLK1)

Prepared: 03/30/23 Analyzed: 04/02/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Selenium	ND	0.260	"

LCS (BGC1033-BS1)

Prepared: 03/30/23 Analyzed: 04/02/23

Arsenic	38.0	0.200	mg/kg wet	40.0	95.0	80-120
Barium	36.1	0.400	"	40.0	90.3	80-120
Selenium	3.50	0.260	"	4.00	87.5	80-120

Duplicate (BGC1033-DUP1)

Source: 2303717-01

Prepared: 03/30/23 Analyzed: 04/02/23

Arsenic	0.877	0.200	mg/kg dry	0.908	3.47	20
Barium	40.9	0.400	"	40.1	1.74	20
Selenium	0.305	0.260	"	0.317	3.92	20

Matrix Spike (BGC1033-MS1)

Source: 2303717-01

Prepared: 03/30/23 Analyzed: 04/02/23

Arsenic	40.5	0.200	mg/kg dry	43.6	0.908	91.0	75-125
Barium	93.4	0.400	"	43.6	40.1	122	75-125
Selenium	3.67	0.260	"	4.36	0.317	77.0	75-125

Matrix Spike Dup (BGC1033-MSD1)

Source: 2303717-01

Prepared: 03/30/23 Analyzed: 04/02/23

Arsenic	40.4	0.200	mg/kg dry	43.6	0.908	90.7	75-125	0.273	25
Barium	93.9	0.400	"	43.6	40.1	123	75-125	0.501	25
Selenium	3.64	0.260	"	4.36	0.317	76.3	75-125	0.793	25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC1042 - General Preparation

Duplicate (BGC1042-DUP1)

Source: 2303716-01

Prepared & Analyzed: 03/31/23

% Solids	91.6	%	91.4	0.147	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BGC1067 - General Preparation

LCS (BGC1067-BS1)

Prepared & Analyzed: 03/31/23

pH	9.09	pH Units	9.18	99.0	95-105
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Duplicate (BGC1067-DUP1)

Source: 2303704-01

Prepared & Analyzed: 03/31/23

pH	6.94	pH Units	6.95	0.144	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/05/23 13:29

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference