

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 ^(*) (mg/kg)	Chrysene (mg/kg)	Fluorene (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	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	0.006	0.019	0.29	82	0.26	
PWW01-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	8.16
PWW01-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	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
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
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
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	0.0217	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	0.0144	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	<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	<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	<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	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	<0.200	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	0.437	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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<0.00500	<0.00500	0.527	83.8	0.828	8.08
SS46 @ 8'	4/4/2022	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	<0.200	27.8	0.383	8.4

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
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

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'	2/16/2022	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'	2/16/2022	1.5 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00501	<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

Notes:

- Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- 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

Benz(a) = Benzanthracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzo(a)fluoranthene

Benzo(k) = Benzo(a)fluoranthene

A,H = Dibenzo(a,h)anthracene

1,2,3-CD = Indeno(1,2,3-cd)pyrene

M = Methylanthracene

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

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

 = sample material excavated and transported off-site for disposal

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
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

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.

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

Sample material excavated and transported off-site for disposal

ft. = Feet

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

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

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	40.346659	-104.745296	1.5	0.0
WDL01 @ 4'	1/10/2022	4 ft. bgs	40.346657	-104.745394	1.4	4.0
MH01 @ 0-6"	1/10/2022	0-6 in. bgs	40.346684	-104.745710	1.4	0.0
SEP01-FL @ 4'	1/10/2022	4 ft. bgs	40.346639	-104.745699	1.3	0.0
SEP01-DL @ 4'	1/10/2022	4 ft. bgs	40.346639	-104.745672	1.4	0.0
PWV01-B @ 5'	1/10/2022	5 ft. bgs	40.346657	-104.745366	1.4	24.4
PWV01-N @ 4'	1/10/2022	4 ft. bgs	40.346670	-104.745369	1.4	43.5
PWV01-W @ 4'	1/10/2022	4 ft. bgs	40.346648	-104.745390	1.3	3.7
PWV01-S @ 4'	1/10/2022	4 ft. bgs	40.346643	-104.745364	1.2	2.4
PWV01-E @ 4'	1/10/2022	4 ft. bgs	40.346656	-104.745343	1.5	3.3
BKG01 @ 0-6"	1/10/2022	0-6 in. bgs	40.346506	-104.745650	1.2	0.0
BKG01 @ 4'	1/10/2022	4 ft. bgs	40.346506	-104.745650	1.2	0.0
BKG01 @ 5'	1/10/2022	5 ft. bgs	40.346506	-104.745650	1.2	0.0
AST01-B @ 3'	2/16/2022	3 ft. bgs	40.346654	-104.745186	0.9	491.0
AST01-N @ 1.5'	2/16/2022	1.5 ft. bgs	40.346663	-104.745200	0.9	22.3
AST01-W @ 1.5'	2/16/2022	1.5 ft. bgs	40.346643	-104.745202	0.9	1,624
AST01-S @ 1.5'	2/16/2022	1.5 ft. bgs	40.346641	-104.745176	0.9	177.0
AST01-E @ 1.5'	2/16/2022	1.5 ft. bgs	40.346659	-104.745173	0.9	1,453
GW01	2/24/2022	5 ft. bgs	NC	NC	NC	NC
SS01 @ 6'	2/24/2022	6 ft. bgs	40.346659	-104.745173	0.9	2.2
SS02 @ 6'	2/24/2022	6 ft. bgs	NC	NC	NC	0.0
SS03 @ 2'	2/24/2022	2 ft. bgs	40.346689	-104.745177	1.0	13.2
SS04 @ 4'	2/24/2022	4 ft. bgs	40.346689	-104.745177	1.0	11.3
SS05 @ 6'	2/25/2022	6 ft. bgs	NC	NC	NC	3.1
SS06 @ 5'	2/25/2022	5 ft. bgs	40.346639	-104.745053	1.1	2,850
SS07 @ 8'	2/28/2022	8 ft. bgs	NC	NC	NC	1.7
SS08 @ 8'	2/28/2022	8 ft. bgs	NC	NC	NC	0.3
BKG02 @ 2'	3/1/2022	2 ft. bgs	40.346406	-104.745196	1.1	0.0
BKG02 @ 5'	3/1/2022	5 ft. bgs	40.346406	-104.745196	1.1	0.0
BKG02 @ 8'	3/1/2022	8 ft. bgs	40.346406	-104.745196	1.1	0.0
SS09 @ 2'	3/1/2022	2 ft. bgs	40.346583	-104.744900	1.0	0.1
SS10 @ 5'	3/1/2022	5 ft. bgs	40.346583	-104.744900	1.0	0.1
SS11 @ 8'	3/1/2022	8 ft. bgs	NC	NC	NC	0.2
SS12 @ 2'	3/1/2022	2 ft. bgs	40.346635	-104.744855	0.9	0.5
SS13 @ 5'	3/1/2022	5 ft. bgs	40.346635	-104.744855	0.9	0.7
BKG03 @ 2'	3/1/2022	2 ft. bgs	40.346475	-104.744980	0.9	0.2
BKG03 @ 5'	3/1/2022	5 ft. bgs	40.346475	-104.744980	0.9	0.3
BKG03 @ 8'	3/1/2022	8 ft. bgs	40.346475	-104.744980	0.9	0.2
SS14 @ 2'	3/1/2022	2 ft. bgs	40.346685	-104.744824	1.0	0.2
SS15 @ 5'	3/1/2022	5 ft. bgs	40.346685	-104.744824	1.0	0.5
SS16 @ 8'	3/1/2022	8 ft. bgs	NC	NC	NC	0.7
SS17 @ 2'	3/2/2022	2 ft. bgs	NC	NC	NC	0.4
SS18 @ 5'	3/2/2022	5 ft. bgs	NC	NC	NC	0.0
SS19 @ 2'	3/2/2022	2 ft. bgs	40.346530	-104.744985	0.9	0.3
SS20 @ 5'	3/2/2022	5 ft. bgs	40.346530	-104.744985	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	40.346639	-104.744822	1.1	0.2
SS24 @ 2.5'	3/28/2022	2.5 ft. bgs	40.346524	-104.744944	1.0	0.4
SS25 @ 2'	3/28/2022	2 ft. bgs	40.346488	-104.745114	1.0	0.7
SS26 @ 5'	3/28/2022	5 ft. bgs	40.346488	-104.745114	1.0	4.2
SS27 @ 8'	3/28/2022	8 ft. bgs	NC	NC	NC	0.3
SS28 @ 2'	3/28/2022	2 ft. bgs	40.346478	-104.745217	1.0	0.6
SS29 @ 5'	3/28/2022	5 ft. bgs	40.346478	-104.745217	1.0	0.3
SS30 @ 2'	3/29/2022	2 ft. bgs	40.346452	-104.745253	0.9	0.0
SS31 @ 5'	3/29/2022	5 ft. bgs	40.346452	-104.745253	0.9	0.9
SS32 @ 2'	3/29/2022	2 ft. bgs	40.346457	-104.745316	0.9	0.7
SS33 @ 5'	3/29/2022	5 ft. bgs	40.346457	-104.745316	0.9	5.1
SS34 @ 2'	3/29/2022	2 ft. bgs	40.346494	-104.745380	0.9	0.4
SS35 @ 5'	3/29/2022	5 ft. bgs	40.346494	-104.745380	0.9	19.8
SS36 @ 8'	3/31/2022	8 ft. bgs	NC	NC	NC	0.7
SS37 @ 8'	3/31/2022	8 ft. bgs	NC	NC	NC	0.0
SS38 @ 8'	3/31/2022	8 ft. bgs	NC	NC	NC	0.6
SS39 @ 2'	3/31/2022	2 ft. bgs	40.346532	-104.745410	0.8	0.3
SS40 @ 5'	3/31/2022	5 ft. bgs	40.346532	-104.745410	0.8	0.6
SS41 @ 2'	3/31/2022	2 ft. bgs	40.346582	-104.745451	1.2	0.0
SS42 @ 5'	3/31/2022	5 ft. bgs	40.346582	-104.745451	1.2	0.5
SS43 @ 8'	4/1/2022	8 ft. bgs	NC	NC	NC	1.8
SS44 @ 8'	4/1/2022	8 ft. bgs	NC	NC	NC	0.7
SS45 @ 8'	4/1/2022	8 ft. bgs	NC	NC	NC	0.2
SS46 @ 8'	4/4/2022	8 ft. bgs	NC	NC	NC	5.9
SS47 @ 2'	4/4/2022	2 ft. bgs	40.346626	-104.745500	0.9	0.3
SS48 @ 5'	4/4/2022	5 ft. bgs	40.346626	-104.745500	0.9	1.0
SS49 @ 2.5'	4/4/2022	2.5 ft. bgs	40.346588	-104.745461	0.9	0.5
SS50 @ 8'	4/4/2022	8 ft. bgs	NC	NC	NC	2.5
SS51 @ 2'	4/6/2022	2 ft. bgs	40.346744	-104.744861	1.2	0.3
SS52 @ 5'	4/6/2022	5 ft. bgs	40.346744	-104.744861	1.2	105.8
SS53 @ 8'	4/6/2022	8 ft. bgs	NC	NC	NC	0.6
BKG04 @ 2'	4/6/2022	2 ft. bgs	40.346702	-104.744748	1.0	0.1
BKG04 @ 2.5'	4/6/2022	2.5 ft. bgs	40.346702	-104.744748	1.0	0.3
BKG04 @ 5'	4/6/2022	5 ft. bgs	40.346702	-104.744748	1.0	0.6
BKG04 @ 8'	4/6/2022	8 ft. bgs	40.346702	-104.744748	1.0	0.7
SS54 @ 8'	4/6/2022	8 ft. bgs	40.346737	-104.744934	0.9	3.1
SS55 @ 8'	4/6/2022	8 ft. bgs	40.346735	-104.745018	0.9	4.9
SS56 @ 8'	4/6/2022	8 ft. bgs	40.346732	-104.745080	0.8	0.6
SS57 @ 8'	4/6/2022	8 ft. bgs	40.346720	-104.745156	0.9	2.4
SS59 @ 8'	4/6/2022	8 ft. bgs	40.346735	-104.744972	0.9	0.6
SS60 @ 8'	4/7/2022	8 ft. bgs	40.346713	-104.745305	0.9	3.2
SS61 @ 8'	4/7/2022	8 ft. bgs	40.346708	-104.745382	0.9	0.3
SS62 @ 8'	4/7/2022	8 ft. bgs	NC	NC	NC	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	40.346710	-104.745440	0.8	0.1
SS64 @ 2'	4/7/2022	2 ft. bgs	40.346700	-104.745525	0.8	0.1
SS65 @ 5'	4/7/2022	5 ft. bgs	40.346700	-104.745525	0.8	0.4
SS66 @ 8'	4/7/2022	8 ft. bgs	NC	NC	NC	0.2

Notes:

1. Global Positioning System (GPS) data is provided in decimal degrees using World Geodetic System (WGS) 84 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 = Data not collected

= 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

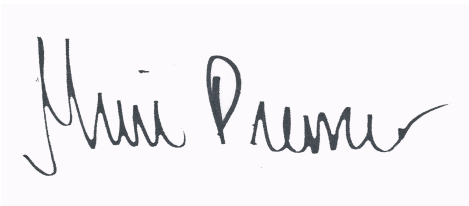
Denver, CO 80203

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, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier 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)

17

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



PDC 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

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



PDC 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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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

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



PDC 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	
<hr/>										
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

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PDC 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
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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

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

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PDC 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

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PDC 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", on a light blue 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			X			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

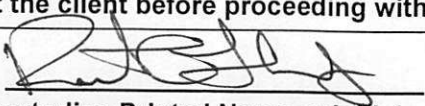
S2 Work Order# _____

Client: Poc HsmanClient 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 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:
01/13/22 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

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PDC 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

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', 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:
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


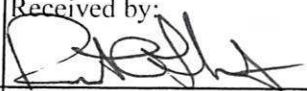
Phone: 303-487-1228

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:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 5.3 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

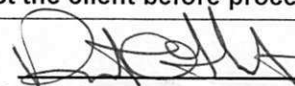
Sample Receipt Checklist

S2 Work Order# 2202207Client: ROC/tasman 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: _____
(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"/>	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

2.16.22
 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:
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

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



PDC 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

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



PDC 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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		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:
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

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PDC 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 Level	Source		%REC		RPD	
	Result	Limit	Units		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

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



PDC 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

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



PDC 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	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		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

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



PDC 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
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Duplicate (BFC0528-DUP1)

Source: 2202192-01

Prepared & Analyzed: 03/23/22

pH	7.86	pH Units	7.88	0.254	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: 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

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

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



Analytical Report

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

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**

Work Order Number: **2202447**

Logged by: **Gabrielle Coeuille**

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



**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

Address: 4653 Table Mountain Drive

Golden, CO. 80403

Telephone: 303-277-9310

Fax:

PM Email: mpremer@s2scientific.com, psbrewsbury@s2scientific.com

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

[illegible]

*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

Received

Date/Time

Relinquished

Date/Time

Received

Date/Time: _____

X

✕

Same Day ☐

Turn-around Time:

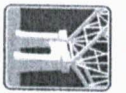
Standard

3 Day

2 Day

Next Day

Same Day ☐



Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7118

Chain of Custody Record & Laboratory Services Agreement

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

Project Name: 2202207

Project No:

Collected by:

Location:

Report To (PM):

Fax:

PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com

Laboratory Project No (Internal): 2202447

Special Remarks:

Report metals only per P.S. 3/17/22 -BB

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

Client: Summit Scientific

Address: 4653 Table Mountain Drive

City, State, Zip: Golden, CO. 80403

Telephone: 303-277-9310

Sample Name

Sample Date

Sample Time

Sample Type (Matrix)*

Comments

1 ASTOI-BO31

2-16-22

1252

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2 ASTOI-WO1.51

2-16-22

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PDC 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

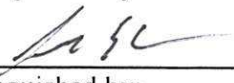
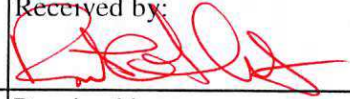
2202315

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: 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)

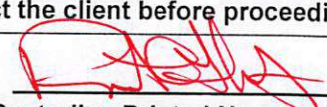
Temp (°C)

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Sameday</u>
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
2-24-22

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:
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

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



PDC Energy
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

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

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

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



PDC Energy
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

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



PDC Energy
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

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PDC Energy
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

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PDC Energy
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

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PDC Energy
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

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PDC Energy
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	Source	%REC		RPD		
		Limit	Units	Level	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

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

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PDC Energy
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

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



PDC Energy
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
----------	------	---	------	-------	----

Summit Scientific

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



PDC Energy
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
----	------	----------	------	------	--------

Duplicate (BFE0561-DUP1)

Source: 2202315-01

Prepared & Analyzed: 05/25/22

pH	7.13	pH Units	6.99	1.98	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 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

March 07, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

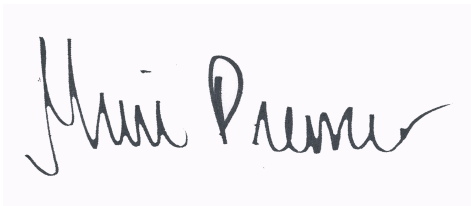
Denver, CO 80203

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", on a light blue 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

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	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			
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: <u>[Signature]</u>	Date/Time: <u>2/24/22</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>2/24/22</u>	Turn Around Time (Check) Same Day <u>X</u> 72 hours 24 hours <u>—</u> Standard <u>X</u> 48 hours <u>—</u>	Notes:
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time:	Received by: <u>[Signature]</u>	Date/Time: <u>2/24/22</u> <u>1600</u>	Sample Integrity: Temperature Upon Receipt: <u>3.1</u> Samples Intact: <u>Yes</u> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

2202316

S2 Work Order#

Sample Receipt Checklist

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)

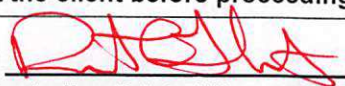
Temp (°C)

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

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



PDC 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

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.

2202327

 S_2

303-277-9310

Page 1 of 1

Project Manager: Mark Longhurst

E-Mail: mark.longhurst@PDCE.com

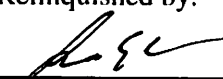
Phone: 303-487-1228

Project Name: Warning 3, 4-2 Tank Battery

Sampler Name: Geo Anderson

Project Number:

					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	5505 e 6'	2/25/22	1150	3			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	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

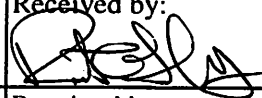
Turn Around Time (Check)

Same Day ☒
72 hours ☐

24 hours ☐
Standard ☐

48 hours ☐

Relinquished by: Tasman's Lock Box
Date/Time:

Received by: 
Date/Time: 2/25/22 1613

Sample Integrity:

Temperature Upon Receipt: 3.2

Samples Intact: ☒ Yes ☐ No

Notes:

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.	<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



PDC Energy
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

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



PDC Energy
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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PDC Energy
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

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
Project Number: [none]
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			

Summit Scientific

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PDC Energy
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

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	
<hr/>										
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	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		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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Summit Scientific

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PDC Energy
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

Reporting				Spike	Source	%REC			RPD	
Analyte	Result	Limit	Units	Level	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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PDC Energy
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	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

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



PDC Energy
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

Matrix Spike (BFC0125-MS1)

Source: 2202327-01

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: 2202327-01

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

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



PDC Energy
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

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PDC Energy
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	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		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

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PDC Energy
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

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PDC Energy
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

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

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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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



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: 2-28-22 Page: 1 of: 1

Project Name: 2202327

Project No:

Collected by:

Location:

Report To (PM):

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

Laboratory Project No (Internal): 2203088

Special Remarks:

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

Client: Summit Scientific

Address: 4653 Table Mountain Drive

City, State Zip: Golden, CO. 80403

Telephone: 303-277-9310

Fax:

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Comments
1 SSOle 05'	2-25-22	1400	S	Boron by Hot Water Soluble Mn-Expt by Saturated Paste Metals: As, Ba, Cd, Cu, Pb, Ni, Se Ag, Zn
2				
3				
4				
5				
6				
7				
8				
9				
10				

*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):

***Antions (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 2-28-22
1400

Received Justine Payne
Date/Time 3/1/22 15:13

Turn-around Time:
☒ Standard
☐ 3 Day
☐ 2 Day
☐ Next Day
☐ Same Day (Specify)



PDC Energy
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 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	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 —	
				24 hours — Standard —	
				48 hours —	
Relinquished by:	Date/Time:	Received by:	Date/Time:	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

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PDC Energy
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.



PDC Energy
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

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



PDC Energy
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

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



PDC Energy
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: 2202327-01

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: 2202327-01

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

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



PDC Energy
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

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



PDC Energy
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, 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 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

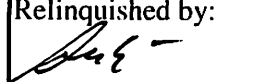
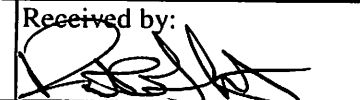
2203001.1

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	1640	3			X			X				X	X	X				pH, EC, SAR by saturated paste
2	SS10 e 5'		1652	3			X			X				X	X	X				
3	SS11 e 8'		1630	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 — Standard — 48 hours — Sample Integrity: Temperature Upon Receipt: 6.3 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 3/22 1600	Received by: 	Date/Time: 3/22 1600		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

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>3/2/22 1600</u>	Received by: <u>[Signature]</u>	Date/Time: <u>3/2/22 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)

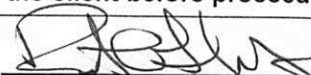
Temp (°C)

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

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PDC Energy
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

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



PDC Energy
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

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



PDC Energy
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

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PDC Energy
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

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PDC Energy
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

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PDC Energy
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

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 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 e 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 e 2'		1000	3			X			X				X	X	X					
3	SS19 e 2'		1446	3			X			X				X	X	X					
4	SS20 e 5'		1455	3			X			X				X	X	X					
5	SS21 e 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:	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: Poc/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):				
<p>⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.</p>				


 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

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 10:41

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

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PDC Energy
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.

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



PDC Energy
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	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		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 Level	Source		%REC		RPD	
	Result	Limit	Units		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, flowing 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

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


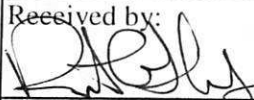
Phone: 303-487-1228

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	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		
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 3/28/22	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: 32822 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


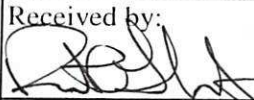
Phone: 303-487-1228

Project Name: Weening 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	pH, EC, SAR by saturated paste	
2	SS24 e 2.5'	↓	1650	3			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: 32822 1600	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 3.3 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	



2/2

2203470

Sample Receipt Checklist

S2 Work Order#

Client: Pochrasman 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: _____
(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 Initials3-28-22
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 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

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

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

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



PDC Energy
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	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 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.9	94.8 %	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 08:34

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

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



PDC Energy
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

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



PDC Energy
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

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



PDC Energy
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

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PDC Energy
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

Summit Scientific

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PDC Energy
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	

Summit Scientific

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PDC Energy
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

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			

Summit Scientific

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PDC Energy
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			

Summit Scientific

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PDC Energy
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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Summit Scientific

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PDC Energy
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

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		Source		%REC		RPD	
	Result	Limit	Units	Level		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

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PDC Energy
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 Level	Source		%REC		RPD	
		Limit	Units		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	

Batch BFE0279 - General Preparation

Duplicate (BFE0279-DUP1)		Source: 2203470-01			Prepared & Analyzed: 05/13/22					
% Solids	80.1		%		80.1			0.103	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

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

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


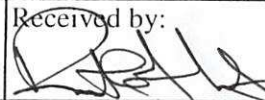
Phone: 303-487-1228

Project Name: Wesning 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					X	pH, EC, SAR by saturated paste <u>chrysene, fluorene,</u> <u>1-m, 2-m</u>
2	SS31 e 5'		905											X	X	X					X	
3	SS32 e 2'		1040											X	X	X					X	
4	SS33 e 5'		1045											X	X	X					X	
5	SS34 e 2'		1130											X	X	X					X	
6	SS35 e 5'		1130											X	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

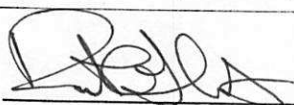
S2 Work Order# 2203490Client: Pbc/Tasman Client Project ID: Werning 3,4-2 Tank Battery

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

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



PDC Energy
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

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PDC Energy
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

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



PDC Energy
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

Summit Scientific

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PDC Energy
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

Summit Scientific

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PDC Energy
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

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 10:44

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

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PDC Energy
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

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PDC Energy
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	
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

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

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		Source		%REC		RPD	
	Result	Limit	Units	Level		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

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PDC Energy
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 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 10:47

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

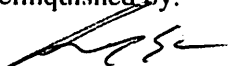
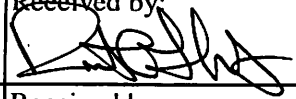
Phone: 303-487-1228

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 <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	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="radio"/> Yes <input type="radio"/> 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 #: _____

	-			
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Matrix (Check all that apply) ☐ Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 4.60Thermometer # 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

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 10:47

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

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PDC Energy
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

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 10:47

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

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 10:47

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

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



PDC Energy
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

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



PDC Energy
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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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 10:47

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

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



PDC Energy
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

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



PDC Energy
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

Analyte	Reporting			Spike	Source	%REC		RPD		
	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

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



PDC Energy
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	Source	%REC		RPD		
	Result	Limit	Units	Level	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

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



PDC Energy
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
----	------	----------	------	-------	----

Summit Scientific

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



PDC Energy
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

April 06, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

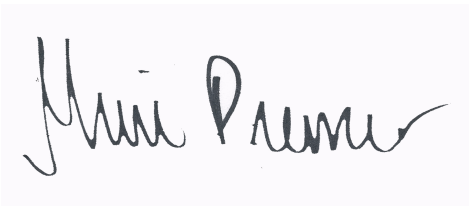
Denver, CO 80203

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, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier 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:
04/06/22 14:44

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

The results in 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

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

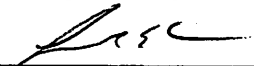
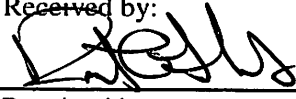
Phone: 303-487-1228

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: 4/1/22 1750	Received by: 	Date/Time: 4/1/22 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	

4.1.22
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:
04/06/22 14:44

SS43@8'
2204005-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/01/22 08:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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:
04/06/22 14:44

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		"	"	"	"	

Summit Scientific

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

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

Reported:
04/06/22 14:44

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:
04/06/22 14:44

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		"	"	"	"	

Summit Scientific

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

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

Reported:
04/06/22 14:44

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

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



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

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

Reported:
04/06/22 14:44

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			"	"	"	"	

Summit Scientific

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

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/06/22 14:44

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 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			

Summit Scientific

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



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

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

Reported:
04/06/22 14:44

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 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	
<hr/>										
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			

Summit Scientific

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



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

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

Reported:
04/06/22 14:44

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 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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Summit Scientific

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

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

Reported:
04/06/22 14:44

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 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			

Summit Scientific

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

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

Reported:
04/06/22 14:44

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	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

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

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/06/22 14:44

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 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

The results in 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

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

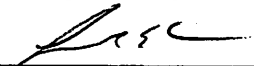
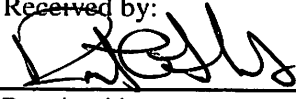
Phone: 303-487-1228

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				X
3	SS45 e 8'		1123											X	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: BCHTASMAN 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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.6 %	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 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

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PDC Energy
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

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PDC Energy
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			

Summit Scientific

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PDC Energy
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	
<hr/>										
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			

Summit Scientific

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PDC Energy
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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Summit Scientific

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PDC Energy
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		Source		%REC		RPD	
	Result	Limit	Units	Level		Result		%REC	Limits	RPD	Limit

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			

Summit Scientific

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PDC Energy
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

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



PDC Energy
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

April 12, 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', with a stylized, flowing 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:
04/12/22 13:09

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

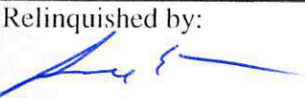

2204047

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				
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				Chrysois, Fluoresc, 1-m, 2-m	
3	SS48 e 5'		1140	3			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					
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 <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4422 1717	Received by: 	Date/Time: 4422 1717	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 3.6 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

2204047

Sample Receipt Checklist

S2 Work Order#

Client: Doc/TasmanClient 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)

3.6

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.	-			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 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

4.4.22

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:
04/12/22 13:09

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:
04/12/22 13:09

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		"	"	"	"	

Summit Scientific

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

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

Reported:
04/12/22 13:09

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

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

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

Reported:
04/12/22 13:09

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		"	"	"	"	

Summit Scientific

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

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

Reported:
04/12/22 13:09

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:
04/12/22 13:09

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			"	"	"	"	

Summit Scientific

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



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

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

Reported:
04/12/22 13:09

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0208	0.0100	mg/L	1	BFD0093	04/05/22	04/10/22	EPA 6020B	

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

Date Sampled: **04/04/22 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.0		%	1	BFD0121	04/06/22	04/07/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/04/22 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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

Summit Scientific

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

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

Reported:
04/12/22 13:09

SS49@2.5'
2204047-04 (Soil)

Summit Scientific

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:
04/12/22 13:09

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:
04/12/22 13:09

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		"	"	"	"	

Summit Scientific

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

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

Reported:
04/12/22 13:09

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:
04/12/22 13:09

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:
04/12/22 13:09

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 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:
04/12/22 13:09

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

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:
04/12/22 13:09

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 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:
04/12/22 13:09

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:
04/12/22 13:09

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 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

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

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/12/22 13:09

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	

Summit Scientific

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

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

Reported:
04/12/22 13:09

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:

04/12/22 13:09

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 BFD0176 - General Preparation

LCS (BFD0176-BS1)

Prepared & Analyzed: 04/08/22

pH	9.08	pH Units	9.18	98.9	95-105
----	------	----------	------	------	--------

Duplicate (BFD0176-DUP1)

Source: 2203523-01

Prepared & Analyzed: 04/08/22

pH	7.35	pH Units	7.33	0.272	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:
04/12/22 13:09

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 80403

303.277.9310

May 17, 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', 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:
05/17/22 07:25

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

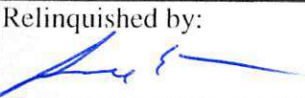

Phone: 303-487-1228

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				
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 <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4422 1717	Received by: 	Date/Time: 4422 1717	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 3.6 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

2204047

Sample Receipt Checklist

S2 Work Order#

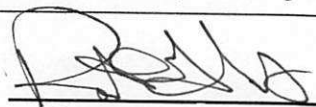
Client: Doc/Tasman Client Project ID: Warning 3,4-2 Tank Battery

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

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

Matrix (Check all that apply) ☐ Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 3.6Thermometer # 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.	-			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 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

4.4.22

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:
05/17/22 07:25

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	0.0424	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0448	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	10.6	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:
05/17/22 07:25

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	0.0226	67.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0189	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	

Summit Scientific

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

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

Reported:
05/17/22 07:25

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	0.0422	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0420	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	11.4	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:
05/17/22 07:25

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	0.0196	58.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0178	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	

Summit Scientific

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

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

Reported:
05/17/22 07:25

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	0.0418	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0426	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	12.0	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:
05/17/22 07:25

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	0.0214	64.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0181	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	

Summit Scientific

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



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

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

Reported:
05/17/22 07:25

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

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



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

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

Reported:
05/17/22 07:25

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:
05/17/22 07:25

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	0.0413	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0422	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	11.3	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:
05/17/22 07:25

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	0.0256	77.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0208	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	

Summit Scientific

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

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 07:25

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:
05/17/22 07:25

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:
05/17/22 07:25

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 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:
05/17/22 07:25

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:
05/17/22 07:25

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:
05/17/22 07:25

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:
05/17/22 07:25

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:
05/17/22 07:25

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:
05/17/22 07:25

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

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:
05/17/22 07:25

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

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

Project: Werning 3, 4-2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/17/22 07:25

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 BFD0176 - General Preparation

LCS (BFD0176-BS1)

Prepared & Analyzed: 04/08/22

pH	9.08	pH Units	9.18	98.9	95-105
----	------	----------	------	------	--------

Duplicate (BFD0176-DUP1)

Source: 2203523-01

Prepared & Analyzed: 04/08/22

pH	7.35	pH Units	7.33	0.272	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:
05/17/22 07:25

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.
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', 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 13:39

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

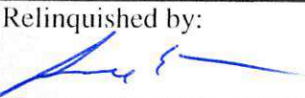

2204047

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				Chrysois, Fluoresc, 1-m, 2-m	
3	SS48 e 5'		1140	3			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					
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 <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4422 1717	Received by: 	Date/Time: 4422 1717	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 3.6 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

2204047

Sample Receipt Checklist

S2 Work Order#

Client: Doc/TasmanClient 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)

3.6

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.	-			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 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

4.4.22

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	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 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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

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 13:39

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

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PDC Energy
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

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



PDC Energy
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

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PDC Energy
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 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	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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% 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

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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 13:39

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			

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PDC Energy
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			

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PDC Energy
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	Result	Reporting			Spike	Source	%REC		RPD		
		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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PDC Energy
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			

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PDC Energy
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

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



PDC Energy
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

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PDC Energy
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	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		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

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PDC Energy
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	Source	%REC		RPD		
		Limit	Units	Level	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	

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 13:39

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
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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

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



PDC Energy
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, 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:
05/31/22 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

220409501

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


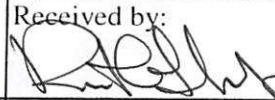
Phone: 303-487-1228

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
3	SS53 e 8'		950											X	X	X				X
4	SS54 e 8'		1057											X	X	X				X
5	SS55 e 8'		1240											X	X	X				X
6	SS56 e 8'		1300											X	X	X				X
7	SS57 e 8'		1415											X	X	X				X
8	SS59 e 8'		1445											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


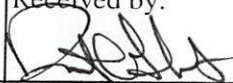
Phone: 303-487-1228

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'	4/6/20	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: 4/6/20	Received by: Tasman's Lock Box	Date/Time: 4/6/20	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: 4/6/22 1718	Received by: 	Date/Time: 4/6/22 1718	Sample Integrity: Temperature Upon Receipt: 7.9 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
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

☐

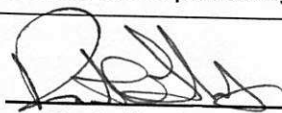
Temp (°C)

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

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



PDC Energy
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

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PDC Energy
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

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



PDC Energy
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

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PDC Energy
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

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PDC Energy
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

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PDC Energy
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

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PDC Energy
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	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 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 14:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 14:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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

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PDC Energy
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

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PDC Energy
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

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PDC Energy
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	QM-02
Barium	276	0.400	"	51.8	174	198	75-125	
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	QM-02
Barium	279	0.400	"	51.8	174	204	75-125	1.08	25	
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	

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	

Summit Scientific

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PDC Energy
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

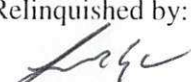
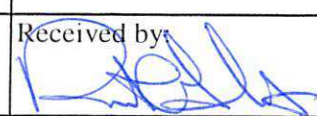
2204108

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

Page 1 of 1

Client: PDC / Tasman 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	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 ___ Sample Integrity: Temperature Upon Receipt: 3.7 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4/7/22 1725	Received by: 	Date/Time: 4/7/22 1725		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.7 %	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 15:08

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

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



PDC Energy
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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:
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

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



PDC Energy
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

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



PDC Energy
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

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PDC Energy
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

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 15:08

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

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



PDC Energy
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

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PDC Energy
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

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PDC Energy
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

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



PDC Energy
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	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

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