

**TABLE 1
FORMER WELLS RANCH 42-30 WELLHEAD
SOIL ANALYTICAL RESULTS SUMMARY TABLE
CONTAMINANTS OF CONCERN**

Sample ID	Date Sampled	Depth	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Naphthalene (mg/kg)	TPH ⁽⁴⁾ (mg/kg)	Chrysene (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Arsenic ⁽⁵⁾ (mg/kg)	Barium ⁽⁶⁾ (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Selenium ⁽⁷⁾ (mg/kg)
Residential SSL ^(1,2)			1.2	490	5.8	58	30	27	2	500	110	180	18	24	0.68	15,000	71	3,100	400	390
Protection of Groundwater SSL ^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	9	1.3	0.006	0.019	0.29	82	0.38	46	14	0.26
WH01 @ 6'	1/26/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	0.0165	0.00899	0.00683	0.00627	9.60	231	0.434	156	528	1.54
FLR01 @ 4'	1/26/2022	4 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	NA	NA	NA	NA	NA	NA
FL01-02 @ 4'	1/26/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS01 @ 7'	2/28/2022	7 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	240	0.00998	<0.00500	<0.00500	<0.00500	1.08	25.4	<0.200	2.57	5.40	0.438
SS03 @ 6'	2/28/2022	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	1.21	57.7	<0.200	2.07	2.84	0.558
SS05 @ 6'	2/28/2022	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	1.93	147	<0.200	3.42	4.90	0.781
SS07 @ 6'	2/28/2022	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	1.74	92.8	<0.200	5.35	12.0	0.801
SS09 @ 6'	2/28/2022	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	1.25	69.6	<0.200	2.81	3.85	0.649

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.
- Value calculated by adding TVPH-GRO, TEPH-DRO, and TEPH-ORO concentrations.
- The highest arsenic concentration (SS05 - 1.93 mg/kg) recorded within the unsaturated interval (6 and 7 ft. bgs), is within 1.25x background concentrations recorded in background soil borings BKG01 - BKG03 (2.5 - 7 ft. bgs).
- The highest barium concentration (SS07 - 92.8 mg/kg), aside from SS05, recorded within the unsaturated interval (6 and 7 ft. bgs), is below the background concentration recorded in background soil boring BKG03 and within 1.25x background concentrations recorded in background soil borings BKG02 (2.5 - 7 ft. bgs).
- The highest selenium concentration (SS09 - 0.649 mg/kg), aside from SS05 and SS07, recorded within the unsaturated interval (6 and 7 ft. bgs), is within 1.25x background concentrations recorded in background soil borings BKG02 and BKG03 (2.5 - 7 ft. bgs).

COGCC = Colorado Oil and Gas Conservation Commission

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

TVPH-GRO = Total volatile petroleum hydrocarbons - gasoline range organics
TEPH-DRO = Total extractable petroleum hydrocarbons - diesel range organics
TEPH-ORO = Total extractable petroleum hydrocarbons - oil range organics
M = Methylnaphthalene
mg/kg = Milligrams per kilogram
TMB = Trimethylbenzene

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

ft. = Feet
bgs = Below ground surface

RED = Analytical result is in exceedance of applicable standard and above 1.25x background concentration.
BOLD = Analytical result is in exceedance of applicable standard and below 1.25x background concentration.
NA = Constituent Not Analyzed

TABLE 2
FORMER WELLS RANCH 42-30 WELLHEAD
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
WH01 @ 6'	1/26/2022	6 ft. bgs	8.73	0.0739	0.0764	0.627
FLR01 @ 4'	1/26/2022	4 ft. bgs	8.81	0.0423	0.0748	0.236
BKG01 @ 4'	1/26/2022	4 ft. bgs	8.43	NA	NA	NA
BKG01 @ 6'	1/26/2022	6 ft. bgs	8.32	NA	NA	NA
SS02 @ 2.5'	2/28/2022	2.5 ft. bgs	7.91	1.35	0.0515	0.0557
BKG02 @ 2.5'	2/28/2022	2.5 ft. bgs	8.02	NA	NA	NA
BKG02 @ 6'	2/28/2022	6 ft. bgs	8.52	NA	NA	NA
BKG02 @ 7'	2/28/2022	7 ft. bgs	8.51	NA	NA	NA
BKG03 @ 2.5'	2/28/2022	2.5 ft. bgs	8.13	NA	NA	NA
BKG03 @ 6'	2/28/2022	6 ft. bgs	8.75	NA	NA	NA
BKG03 @ 7'	2/28/2022	7 ft. bgs	8.75	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 = milligram per liter

ft. = Feet

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

= Sample material excavated and transported off site for disposal

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

BOLD = Analytical result is in exceedance of applicable standard, but below background concentrations.

NA = Constituent Not Analyzed

**TABLE 3
FORMER WELLS RANCH 42-30 WELLHEAD
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
WH01 @ 6'	1/26/2022	6 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0165	<0.00500	<0.00500	<0.00500	<0.00500	0.00899	0.00683	0.00627
FLR01 @ 4'	1/26/2022	4 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

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

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

PAHs = Polycyclic aromatic hydrocarbons

Benzo(a) = Benzantracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

M = Methylnaphthalene

mg/kg = Milligrams per kilogram

ft. = Feet

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

 = Sample material excavated and transported off site for disposal

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

**TABLE 4
FORMER WELLS RANCH 42-30 WELLHEAD
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
WH01 @ 6'	1/26/2022	6 ft. bgs	9.60	231	0.434	<0.30 ⁽⁴⁾	156	528	15.6	1.54	0.114	84.3
BKG01 @ 4'	1/26/2022	4 ft. bgs	1.56	33.6	<0.211	<0.30 ⁽⁴⁾	2.23	2.80	2.36	0.364	<0.0211	10.5
BKG01 @ 6'	1/26/2022	6 ft. bgs	1.31	38.4	<0.211	<0.30 ⁽⁴⁾	2.10	2.65	2.39	0.380	<0.0211	10.8
BKG02 @ 2.5'	2/28/2022	2.5 ft. bgs	1.32	79.2	<0.215	<0.30 ⁽⁴⁾	3.56	4.59	3.61	0.508	0.0254	14.2
BKG02 @ 6'	2/28/2022	6 ft. bgs	1.39	84.0	<0.211	<0.30 ⁽⁴⁾	2.88	4.20	3.44	0.496	<0.0211	12.8
BKG02 @ 7'	2/28/2022	7 ft. bgs	1.68	85.4	<0.216	<0.30 ⁽⁴⁾	4.25	5.10	4.93	0.620	0.0313	17.3
BKG03 @ 2.5'	2/28/2022	2.5 ft. bgs	1.43	67.8	<0.215	<0.30 ⁽⁴⁾	3.70	4.49	3.81	0.541	0.0217	14.4
BKG03 @ 6'	2/28/2022	6 ft. bgs	1.35	80.2	<0.212	<0.30 ⁽⁴⁾	2.86	4.10	3.65	0.492	0.0249	13.4
BKG03 @ 7'	2/28/2022	7 ft. bgs	1.83	96.1	<0.213	<0.30 ⁽⁴⁾	3.65	4.84	4.98	0.607	0.0294	17.8
SB01 @ 6'	12/08/2022	6 ft. bgs	NA	114	NA	NA	NA	NA	NA	0.547	NA	NA
SB01 @ 7'	12/08/2022	7 ft. bgs	NA	69.2	NA	NA	NA	NA	NA	0.357 ⁽⁵⁾	NA	NA
SB01 @ 8'	12/08/2022	8 ft. bgs	NA	14.1	NA	NA	NA	NA	NA	0.176	NA	NA
SB02 @ 6'	12/08/2022	6 ft. bgs	NA	96.2	NA	NA	NA	NA	NA	0.461 ⁽⁵⁾	NA	NA
SB03 @ 6'	12/08/2022	6 ft. bgs	NA	76.8	NA	NA	NA	NA	NA	0.471 ⁽⁵⁾	NA	NA
SB04 @ 6'	12/08/2022	6 ft. bgs	NA	27.2	NA	NA	NA	NA	NA	0.336 ⁽⁵⁾	NA	NA
SB05 @ 6'	12/08/2022	6 ft. bgs	NA	NA	NA	NA	NA	NA	NA	0.490 ⁽⁵⁾	NA	NA
SB05 @ 7'	12/08/2022	7 ft. bgs	NA	NA	NA	NA	NA	NA	NA	0.306 ⁽⁵⁾	NA	NA
SB05 @ 8'	12/08/2022	8 ft. bgs	NA	NA	NA	NA	NA	NA	NA	0.360 ⁽⁵⁾	NA	NA
SB06 @ 6'	12/08/2022	6 ft. bgs	NA	NA	NA	NA	NA	NA	NA	0.615	NA	NA
SB07 @ 6'	12/08/2022	6 ft. bgs	NA	NA	NA	NA	NA	NA	NA	0.410 ⁽⁵⁾	NA	NA
SB08 @ 6'	12/08/2022	6 ft. bgs	NA	NA	NA	NA	NA	NA	NA	0.428 ⁽⁵⁾	NA	NA
BKG04 @ 2.5'	12/08/2022	2.5 ft. bgs	NA	88.9	NA	NA	NA	NA	NA	0.545	NA	NA
BKG04 @ 4'	12/08/2022	4 ft. bgs	NA	69.7	NA	NA	NA	NA	NA	0.450	NA	NA
BKG04 @ 5'	12/08/2022	5 ft. bgs	NA	130	NA	NA	NA	NA	NA	0.538	NA	NA
BKG04 @ 6'	12/08/2022	6 ft. bgs	NA	53.2	NA	NA	NA	NA	NA	0.338	NA	NA
BKG04 @ 7'	12/08/2022	7 ft. bgs	NA	21.3	NA	NA	NA	NA	NA	0.311	NA	NA
BKG04 @ 8'	12/08/2022	8 ft. bgs	NA	17.9	NA	NA	NA	NA	NA	0.287	NA	NA
BKG05 @ 2.5'	12/08/2022	2.5 ft. bgs	NA	76.9	NA	NA	NA	NA	NA	0.423	NA	NA
BKG05 @ 4'	12/08/2022	4 ft. bgs	NA	77.9	NA	NA	NA	NA	NA	0.469	NA	NA
BKG05 @ 5'	12/08/2022	5 ft. bgs	NA	20.0	NA	NA	NA	NA	NA	0.296	NA	NA
BKG05 @ 6'	12/08/2022	6 ft. bgs	NA	31.3	NA	NA	NA	NA	NA	0.403	NA	NA
BKG05 @ 7'	12/08/2022	7 ft. bgs	NA	25.4	NA	NA	NA	NA	NA	0.308	NA	NA
BKG05 @ 8'	12/08/2022	8 ft. bgs	NA	16.4	NA	NA	NA	NA	NA	0.320	NA	NA

Notes:

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
3. SSLs are applicable if a pathway for communication with groundwater is present.
4. Compound falls within COGCC Table 915-1 Footnote 9.
5. Selenium concentrations observed in soil sample are less than 1.25x the average background selenium exceedance (0.435 mg/kg x 1.25 = 0.544 mg/kg).

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, 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 and below 1.25x background concentration.

NA = Constituent Not Analyzed

**TABLE 5
FORMER WELLS RANCH 42-30 WELLHEAD
FIELD DATA SUMMARY TABLE**

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
			Latitude	Longitude		
WH01 @ 6'	1/26/2022	6 ft. bgs	40.459285	-104.473307	2.5	0.0
FLR01 @ 4'	1/26/2022	4 ft. bgs	40.459285	-104.473319	1.5	0.5
WHS01-S @ 0-6"	1/26/2022	0-6 in. bgs	40.459225	-104.473283	1.3	0.0
WHS01-E @ 0-6"	1/26/2022	0-6 in. bgs	40.459323	-104.473200	1.1	0.0
WHS01-N @ 0-6"	1/26/2022	0-6 in. bgs	40.459355	-104.473330	1.1	0.0
WHS01-W @ 0-6"	1/26/2022	0-6 in. bgs	40.459308	-104.473420	1.2	0.0
BKG01 @ 4'	1/26/2022	4 ft. bgs	40.459171	-104.473572	0.9	0.1
BKG01 @ 6'	1/26/2022	6 ft. bgs	40.459171	-104.473572	0.9	0.1
FL01-01 @ 4'	1/26/2022	4 ft. bgs	40.459898	-104.473338	1.2	0.0
FL01-02 @ 4'	1/26/2022	4 ft. bgs	40.460952	-104.473339	1.1	0.1
FL01-03 @ 4'	1/26/2022	4 ft. bgs	40.462371	-104.472876	1	0.2
SS01 @ 7'	2/28/2022	7 ft. bgs	NC	NC	NC	0.0
SS02 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459266	-104.473293	1.2	0.0
SS03 @ 6'	2/28/2022	6 ft. bgs	40.459266	-104.473293	1.2	0.0
SS04 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459300	-104.473280	1.1	0.0
SS05 @ 6'	2/28/2022	6 ft. bgs	40.459300	-104.473280	1.1	0.0
SS06 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459289	-104.473321	1.1	0.0
SS07 @ 6'	2/28/2022	6 ft. bgs	40.459289	-104.473321	1.1	0.0
SS08 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459321	-104.473300	1.1	0.0
SS09 @ 6'	2/28/2022	6 ft. bgs	40.459321	-104.473300	1.1	0.0
BKG02 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459200	-104.473187	1.2	0.0
BKG02 @ 6'	2/28/2022	6 ft. bgs	40.459200	-104.473187	1.2	0.0
BKG02 @ 7'	2/28/2022	7 ft. bgs	40.459200	-104.473187	1.2	0.0
BKG03 @ 2.5'	2/28/2022	2.5 ft. bgs	40.459358	-104.473203	1.4	0.0
BKG03 @ 6'	2/28/2022	6 ft. bgs	40.459358	-104.473203	1.4	0.0
BKG03 @ 7'	2/28/2022	7 ft. bgs	40.459358	-104.473203	1.4	0.0
SB01 @ 6'	12/08/2022	6 ft. bgs	40.459309	-104.473276	NC	0.0
SB01 @ 7'	12/08/2022	7 ft. bgs	40.459309	-104.473276	NC	0.0
SB01 @ 8'	12/08/2022	8 ft. bgs	40.459309	-104.473276	NC	0.0
SB02 @ 6'	12/08/2022	6 ft. bgs	40.459334	-104.473276	NC	0.0
SB03 @ 6'	12/08/2022	6 ft. bgs	40.459309	-104.473233	NC	0.0
SB04 @ 6'	12/08/2022	6 ft. bgs	40.459280	-104.473276	NC	0.0
SB05 @ 6'	12/08/2022	6 ft. bgs	40.459294	-104.473327	NC	0.0
SB05 @ 7'	12/08/2022	7 ft. bgs	40.459294	-104.473327	NC	0.0
SB05 @ 8'	12/08/2022	8 ft. bgs	40.459294	-104.473327	NC	0.0
SB06 @ 6'	12/08/2022	6 ft. bgs	40.459323	-104.473327	NC	0.0
SB07 @ 6'	12/08/2022	6 ft. bgs	40.459294	-104.473362	NC	0.0
SB08 @ 6'	12/08/2022	6 ft. bgs	40.459268	-104.473327	NC	0.0
BKG04 @ 2.5'	12/08/2022	2.5 ft. bgs	40.459395	-104.473394	NC	0.0
BKG04 @ 4'	12/08/2022	4 ft. bgs	40.459395	-104.473394	NC	0.0
BKG04 @ 5'	12/08/2022	5 ft. bgs	40.459395	-104.473394	NC	0.0
BKG04 @ 6'	12/08/2022	6 ft. bgs	40.459395	-104.473394	NC	0.0

TABLE 5
FORMER WELLS RANCH 42-30 WELLHEAD
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
			Latitude	Longitude		
BKG04 @ 7'	12/08/2022	7 ft. bgs	40.459395	-104.473394	NC	0.0
BKG04 @ 8'	12/08/2022	8 ft. bgs	40.459395	-104.473394	NC	0.0
BKG05 @ 2.5'	12/08/2022	2.5 ft. bgs	40.459314	-104.473496	NC	0.0
BKG05 @ 4'	12/08/2022	4 ft. bgs	40.459314	-104.473496	NC	0.0
BKG05 @ 5'	12/08/2022	5 ft. bgs	40.459314	-104.473496	NC	0.0
BKG05 @ 6'	12/08/2022	6 ft. bgs	40.459314	-104.473496	NC	0.0
BKG05 @ 7'	12/08/2022	7 ft. bgs	40.459314	-104.473496	NC	0.0
BKG05 @ 8'	12/08/2022	8 ft. bgs	40.459314	-104.473496	NC	0.0

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

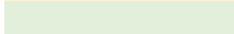
ft. = Feet

in. = Inches

bgs = Below ground surface

NC = Data not collected

 = Source material characterization sample, sample material 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

April 21, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Wells Ranch 42-30 Wellhead

Work Order #2201337

Enclosed are the results of analyses for samples received by Summit Scientific on 01/26/22 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', written in a cursive style.

Paul Shrewsbury

President



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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH01@6'	2201337-01	Soil	01/26/22 10:40	01/26/22 16:00
FLR01@4'	2201337-02	Soil	01/26/22 10:45	01/26/22 16:00
FL01-02@4'	2201337-03	Soil	01/26/22 11:30	01/26/22 16:00
BKG01@4'	2201337-04	Soil	01/26/22 12:20	01/26/22 16:00
BKG01@6'	2201337-05	Soil	01/26/22 12:30	01/26/22 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.

2201337

Summit Scientific

S₂

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

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
 Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
 City/State/Zip: Broomfield/ CO/ 80020
 Phone: 303-487-1228 Project Name: Willis Ranch 42-30 Wellhead
 Sampler Name: Matayan W. 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	GBTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	VOC - 915	PAH - 915	Metals - 915			
1	WH01@6"	1/26/22	1040	3			X			X				X	X	X	X		X		pH, EC, SAR by saturated paste <u>IMBc (1,24,1,35)</u> <u>on hold</u>	
2	FLR01@4'	↓	1045	3			X			X				X	X	X	X		X			
3	FID1-02@4'	↓	1130	3			X			X				X	X				X			
4	BVG01@4'	↓	1220	1			X			X												X
5	BVG01@6"	↓	1230	1			X			X												X
6																						
7																						
8																						
9																						
10																						

Relinquished by: <u>Matayan W.</u>	Date/Time: <u>1/26/22</u> <u>1600</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time:	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: <u>5.1</u> Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes:
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time:	Received by: <u>[Signature]</u>	Date/Time: <u>12622</u> <u>1600</u>		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2201337

Client: Pac/Tasman Client Project ID: Wells Ranch 4230 wellhead

Shipped 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) 5.1

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON ICE
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input 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, 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 Initials

1 20 22
Date/Time



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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

WH01@6'
2201337-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFA0439	01/27/22	01/29/22	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: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0440	01/27/22	01/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		131 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

WH01@6'
2201337-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0455	01/28/22	01/29/22	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	0.0165	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	0.00899	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.00683	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.00627	0.00500	"	"	"	"	"	"	

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	67.7 %	40-150	"	"	"	"	"	"	
Surrogate: Fluoranthene-d10	91.6 %	40-150	"	"	"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	9.60	0.356	mg/kg dry	1	BFC0082	03/04/22	03/09/22	EPA 6020B	
Barium	231	0.713	"	"	"	"	"	"	
Cadmium	0.434	0.356	"	"	"	"	"	"	
Copper	156	0.713	"	"	"	"	"	"	
Lead	528	0.356	"	"	"	"	"	"	
Nickel	15.6	0.713	"	"	"	"	"	"	
Selenium	1.54	0.463	"	"	"	"	"	"	
Silver	0.114	0.0356	"	"	"	"	"	"	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

WH01@6'
2201337-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Zinc	84.3	0.713	mg/kg dry	1	BFC0082	03/04/22	03/09/22	EPA 6020B
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Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0265	02/22/22	02/22/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	56.1		%	1	BFA0446	01/27/22	01/28/22	Calculation	

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

Date Sampled: **01/26/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.83		pH Units	1	BFC0547	03/24/22	03/24/22	EPA 9045D	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

FLR01@4'
2201337-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFA0439	01/27/22	01/29/22	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: **01/26/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.9 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0440	01/27/22	01/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

FLR01@4'
2201337-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0455	01/28/22	01/29/22	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: **01/26/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.6 %	40-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.0		%	1	BFA0446	01/27/22	01/28/22	Calculation	

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

Date Sampled: **01/26/22 10:45**

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: Wells Ranch 42-30 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

FLR01@4'
2201337-02 (Soil)

Summit Scientific

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

pH	8.34	pH Units	1	BFC0547	03/24/22	03/24/22	EPA 9045D
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Summit Scientific

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



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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

FL01-02@4'
2201337-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFA0439	01/27/22	01/29/22	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: **01/26/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.1 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0440	01/27/22	01/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		117 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

BKG01@4'
2201337-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/26/22 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.56	0.211	mg/kg dry	1	BFC0432	03/21/22	03/30/22	EPA 6020B	
Barium	33.6	0.422	"	"	"	"	"	"	
Cadmium	ND	0.211	"	"	"	"	"	"	
Copper	2.23	0.422	"	"	"	"	"	"	
Lead	2.80	0.211	"	"	"	"	"	"	
Nickel	2.36	0.422	"	"	"	"	"	"	
Selenium	0.364	0.274	"	"	"	"	"	"	
Silver	ND	0.0211	"	"	"	"	"	"	
Zinc	10.5	0.422	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/26/22 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0265	02/22/22	02/22/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.8		%	1	BFB0193	02/17/22	02/17/22	Calculation	

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

Date Sampled: **01/26/22 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.43		pH Units	1	BFD0406	04/20/22	04/20/22	EPA 9045D	I-04

Summit Scientific

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



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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

BKG01@6'
2201337-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/26/22 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.31	0.211	mg/kg dry	1	BFC0432	03/21/22	03/30/22	EPA 6020B	
Barium	38.4	0.422	"	"	"	"	"	"	
Cadmium	ND	0.211	"	"	"	"	"	"	
Copper	2.10	0.422	"	"	"	"	"	"	
Lead	2.65	0.211	"	"	"	"	"	"	
Nickel	2.39	0.422	"	"	"	"	"	"	
Selenium	0.380	0.274	"	"	"	"	"	"	
Silver	ND	0.0211	"	"	"	"	"	"	
Zinc	10.8	0.422	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/26/22 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0265	02/22/22	02/22/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.9		%	1	BFB0193	02/17/22	02/17/22	Calculation	

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

Date Sampled: **01/26/22 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.32		pH Units	1	BFD0406	04/20/22	04/20/22	EPA 9045D	I-04

Summit Scientific

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



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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFA0439 - EPA 5030 Soil MS

Blank (BFA0439-BLK1)

Prepared: 01/27/22 Analyzed: 01/28/22

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	0.0446		"	0.0400		112	23-173				
Surrogate: Toluene-d8	0.0423		"	0.0400		106	20-170				
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0400		94.6	21-167				

LCS (BFA0439-BS1)

Prepared: 01/27/22 Analyzed: 01/28/22

Benzene	0.0691	0.0020	mg/kg	0.0750		92.2	70-130				
Toluene	0.0758	0.0050	"	0.0750		101	70-130				
Ethylbenzene	0.0691	0.0050	"	0.0750		92.2	70-130				
m,p-Xylene	0.137	0.010	"	0.150		91.2	70-130				
o-Xylene	0.0710	0.0050	"	0.0750		94.7	70-130				
1,2,4-Trimethylbenzene	0.0740	0.0050	"	0.0750		98.7	70-130				
1,3,5-Trimethylbenzene	0.0717	0.0050	"	0.0750		95.6	70-130				
Naphthalene	0.0944	0.0038	"	0.0750		126	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0428		"	0.0400		107	23-173				
Surrogate: Toluene-d8	0.0434		"	0.0400		108	20-170				
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.4	21-167				

Matrix Spike (BFA0439-MS1)

Source: 2201259-01

Prepared: 01/27/22 Analyzed: 01/28/22

Benzene	0.0735	0.0020	mg/kg	0.0750	ND	98.0	70-130				
Toluene	0.0829	0.0050	"	0.0750	ND	111	70-130				
Ethylbenzene	0.0800	0.0050	"	0.0750	ND	107	70-130				
m,p-Xylene	0.160	0.010	"	0.150	ND	107	70-130				
o-Xylene	0.0820	0.0050	"	0.0750	ND	109	70-130				
1,2,4-Trimethylbenzene	0.0868	0.0050	"	0.0750	ND	116	70-130				
1,3,5-Trimethylbenzene	0.0842	0.0050	"	0.0750	ND	112	70-130				
Naphthalene	0.0958	0.0038	"	0.0750	ND	128	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0461		"	0.0400		115	23-173				
Surrogate: Toluene-d8	0.0420		"	0.0400		105	20-170				
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	21-167				

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/21/22 15:09

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFA0439 - EPA 5030 Soil MS

Matrix Spike Dup (BFA0439-MSD1)	Source: 2201259-01			Prepared: 01/27/22 Analyzed: 01/28/22						
Benzene	0.0763	0.0020	mg/kg	0.0750	ND	102	70-130	3.73	30	
Toluene	0.0822	0.0050	"	0.0750	ND	110	70-130	0.909	30	
Ethylbenzene	0.0827	0.0050	"	0.0750	ND	110	70-130	3.39	30	
m,p-Xylene	0.165	0.010	"	0.150	ND	110	70-130	3.13	30	
o-Xylene	0.0842	0.0050	"	0.0750	ND	112	70-130	2.60	30	
1,2,4-Trimethylbenzene	0.0896	0.0050	"	0.0750	ND	120	70-130	3.20	30	
1,3,5-Trimethylbenzene	0.0864	0.0050	"	0.0750	ND	115	70-130	2.60	30	
Naphthalene	0.0877	0.0038	"	0.0750	ND	117	70-130	8.80	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0453</i>		<i>"</i>	<i>0.0400</i>		<i>113</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.4</i>	<i>21-167</i>			

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/21/22 15:09

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFA0440 - EPA 3550A

Blank (BFA0440-BLK1)

Prepared: 01/27/22 Analyzed: 01/28/22

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

LCS (BFA0440-BS1)

Prepared: 01/27/22 Analyzed: 01/28/22

C10-C28 (DRO)	472	50	mg/kg	500	94.4	70-130				
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Matrix Spike (BFA0440-MS1)

Source: 2201261-01

Prepared: 01/27/22 Analyzed: 01/28/22

C10-C28 (DRO)	514	50	mg/kg	500	24.4	97.9	70-130			
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Matrix Spike Dup (BFA0440-MSD1)

Source: 2201261-01

Prepared: 01/27/22 Analyzed: 01/28/22

C10-C28 (DRO)	530	50	mg/kg	500	24.4	101	70-130	2.95	20	
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFA0455 - EPA 5030 Soil MS

Blank (BFA0455-BLK1)

Prepared & Analyzed: 01/28/22

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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0252		"	0.0333		75.5	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0273		"	0.0333		81.9	40-150			

LCS (BFA0455-BS1)

Prepared & Analyzed: 01/28/22

Acenaphthene	0.0302	0.00500	mg/kg	0.0333	90.5	31-137
Anthracene	0.0325	0.00500	"	0.0333	97.5	30-120
Benzo (a) anthracene	0.0359	0.00500	"	0.0333	108	30-120
Benzo (a) pyrene	0.0292	0.00500	"	0.0333	87.5	30-120
Benzo (b) fluoranthene	0.0290	0.00500	"	0.0333	86.9	30-120
Benzo (k) fluoranthene	0.0276	0.00500	"	0.0333	82.9	30-120
Chrysene	0.0324	0.00500	"	0.0333	97.1	30-120
Dibenz (a,h) anthracene	0.0299	0.00500	"	0.0333	89.6	30-120
Fluoranthene	0.0333	0.00500	"	0.0333	99.9	30-120
Fluorene	0.0318	0.00500	"	0.0333	95.3	30-120
Indeno (1,2,3-cd) pyrene	0.0277	0.00500	"	0.0333	83.1	30-120
Pyrene	0.0308	0.00500	"	0.0333	92.5	35-142
1-Methylnaphthalene	0.0314	0.00500	"	0.0333	94.2	35-142
2-Methylnaphthalene	0.0306	0.00500	"	0.0333	91.7	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0301		"	0.0333	90.2	40-150
<i>Surrogate: Fluoranthene-d10</i>	0.0345		"	0.0333	104	40-150

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFA0455 - EPA 5030 Soil MS

Matrix Spike (BFA0455-MS1)		Source: 2201300-01			Prepared: 01/28/22 Analyzed: 01/29/22	
Acenaphthene	0.0214	0.00500	mg/kg	0.0333	ND	64.3 31-137
Anthracene	0.0237	0.00500	"	0.0333	ND	71.0 30-120
Benzo (a) anthracene	0.0257	0.00500	"	0.0333	ND	77.1 30-120
Benzo (a) pyrene	0.0203	0.00500	"	0.0333	ND	60.8 30-120
Benzo (b) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.7 30-120
Benzo (k) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.2 30-120
Chrysene	0.0226	0.00500	"	0.0333	ND	67.8 30-120
Dibenz (a,h) anthracene	0.0207	0.00500	"	0.0333	ND	62.2 30-120
Fluoranthene	0.0239	0.00500	"	0.0333	ND	71.7 30-120
Fluorene	0.0223	0.00500	"	0.0333	ND	66.9 30-120
Indeno (1,2,3-cd) pyrene	0.0194	0.00500	"	0.0333	ND	58.1 30-120
Pyrene	0.0227	0.00500	"	0.0333	ND	68.0 35-142
1-Methylnaphthalene	0.0216	0.00500	"	0.0333	ND	64.9 15-130
2-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.6 15-130
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0223</i>		<i>"</i>	<i>0.0333</i>		<i>67.0 40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0254</i>		<i>"</i>	<i>0.0333</i>		<i>76.2 40-150</i>

Matrix Spike Dup (BFA0455-MSD1)		Source: 2201300-01			Prepared: 01/28/22 Analyzed: 01/29/22	
Acenaphthene	0.0219	0.00500	mg/kg	0.0333	ND	65.8 31-137 2.32 30
Anthracene	0.0258	0.00500	"	0.0333	ND	77.4 30-120 8.70 30
Benzo (a) anthracene	0.0288	0.00500	"	0.0333	ND	86.4 30-120 11.5 30
Benzo (a) pyrene	0.0227	0.00500	"	0.0333	ND	68.2 30-120 11.6 30
Benzo (b) fluoranthene	0.0231	0.00500	"	0.0333	ND	69.2 30-120 13.1 30
Benzo (k) fluoranthene	0.0197	0.00500	"	0.0333	ND	59.0 30-120 8.42 30
Chrysene	0.0242	0.00500	"	0.0333	ND	72.7 30-120 6.89 30
Dibenz (a,h) anthracene	0.0243	0.00500	"	0.0333	ND	73.0 30-120 15.9 30
Fluoranthene	0.0260	0.00500	"	0.0333	ND	78.1 30-120 8.61 30
Fluorene	0.0239	0.00500	"	0.0333	ND	71.7 30-120 6.85 30
Indeno (1,2,3-cd) pyrene	0.0238	0.00500	"	0.0333	ND	71.4 30-120 20.5 30
Pyrene	0.0248	0.00500	"	0.0333	ND	74.3 35-142 8.97 30
1-Methylnaphthalene	0.0265	0.00500	"	0.0333	ND	79.6 15-130 20.4 50
2-Methylnaphthalene	0.0244	0.00500	"	0.0333	ND	73.1 15-130 10.7 50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0255</i>		<i>"</i>	<i>0.0333</i>		<i>76.4 40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0280</i>		<i>"</i>	<i>0.0333</i>		<i>83.9 40-150</i>

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/21/22 15:09

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

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

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

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 BFC0432 - EPA 3050B

Blank (BFC0432-BLK1)

Prepared: 03/21/22 Analyzed: 03/30/22

Arsenic	ND	0.200	mg/kg wet						
Barium	ND	0.400	"						
Cadmium	ND	0.200	"						
Copper	ND	0.400	"						
Lead	ND	0.200	"						
Nickel	ND	0.400	"						
Selenium	ND	0.260	"						
Silver	ND	0.0200	"						
Zinc	ND	0.400	"						

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFC0432 - EPA 3050B

LCS (BFC0432-BS1)

Prepared: 03/21/22 Analyzed: 03/30/22

Arsenic	39.0	0.200	mg/kg wet	40.0		97.5	80-120			
Barium	36.4	0.400	"	40.0		91.0	80-120			
Cadmium	1.91	0.200	"	2.00		95.6	80-120			
Copper	37.1	0.400	"	40.0		92.7	80-120			
Lead	18.6	0.200	"	20.0		92.8	80-120			
Nickel	35.5	0.400	"	40.0		88.7	80-120			
Selenium	3.52	0.260	"	4.00		88.1	80-120			
Silver	1.83	0.0200	"	2.00		91.5	80-120			
Zinc	40.5	0.400	"	40.0		101	80-120			

Duplicate (BFC0432-DUP1)

Source: 2203307-01

Prepared: 03/21/22 Analyzed: 03/30/22

Arsenic	5.13	0.246	mg/kg dry		4.81			6.55	20	
Barium	138	0.492	"		132			4.09	20	
Cadmium	0.290	0.246	"		0.342			16.5	20	
Copper	12.7	0.492	"		12.6			1.25	20	
Lead	9.82	0.246	"		10.4			5.91	20	
Nickel	11.4	0.492	"		10.6			6.99	20	
Selenium	0.969	0.320	"		0.929			4.25	20	
Silver	0.0773	0.0246	"		0.0750			3.12	20	
Zinc	43.3	0.492	"		42.1			2.71	20	

Matrix Spike (BFC0432-MS1)

Source: 2203307-01

Prepared: 03/21/22 Analyzed: 03/30/22

Arsenic	55.1	0.246	mg/kg dry	49.2	4.81	102	75-125			
Barium	191	0.492	"	49.2	132	118	75-125			
Cadmium	2.50	0.246	"	2.46	0.342	87.5	75-125			
Copper	57.4	0.492	"	49.2	12.6	91.1	75-125			
Lead	29.4	0.246	"	24.6	10.4	77.0	75-125			
Nickel	54.9	0.492	"	49.2	10.6	90.1	75-125			
Selenium	4.91	0.320	"	4.92	0.929	81.0	75-125			
Silver	2.09	0.0246	"	2.46	0.0750	81.7	75-125			
Zinc	89.8	0.492	"	49.2	42.1	96.9	75-125			

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/21/22 15:09

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BFC0432 - EPA 3050B

Matrix Spike Dup (BFC0432-MSD1)	Source: 2203307-01			Prepared: 03/21/22 Analyzed: 03/30/22							
Arsenic	51.5	0.246	mg/kg dry	49.2	4.81	95.0	75-125	6.74	25		
Barium	197	0.492	"	49.2	132	131	75-125	3.06	25		QM-05
Cadmium	2.29	0.246	"	2.46	0.342	79.0	75-125	8.78	25		
Copper	51.0	0.492	"	49.2	12.6	78.0	75-125	11.9	25		
Lead	32.6	0.246	"	24.6	10.4	90.3	75-125	10.6	25		
Nickel	51.1	0.492	"	49.2	10.6	82.3	75-125	7.25	25		
Selenium	4.74	0.320	"	4.92	0.929	77.4	75-125	3.70	25		
Silver	1.94	0.0246	"	2.46	0.0750	75.9	75-125	7.07	25		
Zinc	83.8	0.492	"	49.2	42.1	84.8	75-125	6.86	25		

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/21/22 15:09

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFB0265 - 3060A Mod

Blank (BFB0265-BLK1)

Prepared & Analyzed: 02/22/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFB0265-BS1)

Prepared & Analyzed: 02/22/22

Chromium, Hexavalent 27.4 0.30 mg/kg wet 25.0 110 80-120

Duplicate (BFB0265-DUP1)

Source: 2201337-01

Prepared & Analyzed: 02/22/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFB0265-MS1)

Source: 2201337-01

Prepared & Analyzed: 02/22/22

Chromium, Hexavalent 50.1 0.30 mg/kg dry 44.5 ND 112 75-125

Matrix Spike Dup (BFB0265-MSD1)

Source: 2201337-01

Prepared & Analyzed: 02/22/22

Chromium, Hexavalent 46.1 0.30 mg/kg dry 44.5 ND 104 75-125 8.15 20

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/21/22 15:09

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

Summit Scientific

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

Batch BFA0446 - General Preparation

Duplicate (BFA0446-DUP1)		Source: 2201307-03		Prepared: 01/27/22 Analyzed: 01/28/22	
% Solids	84.5		%	84.3	0.253 20

Batch BFB0193 - General Preparation

Duplicate (BFB0193-DUP1)		Source: 2201337-04		Prepared & Analyzed: 02/17/22	
% Solids	93.9		%	94.8	0.924 20

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/21/22 15:09

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

Summit Scientific

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

Batch BFC0547 - General Preparation

LCS (BFC0547-BS1)

Prepared & Analyzed: 03/24/22

pH	9.11		pH Units	9.18		99.2	95-105		
----	------	--	----------	------	--	------	--------	--	--

Duplicate (BFC0547-DUP1)

Source: 2201306-01

Prepared & Analyzed: 03/24/22

pH	8.50		pH Units		8.44			0.708	20
----	------	--	----------	--	------	--	--	-------	----

Batch BFD0406 - General Preparation

LCS (BFD0406-BS1)

Prepared & Analyzed: 04/20/22

pH	9.03		pH Units	9.18		98.4	95-105		
----	------	--	----------	------	--	------	--------	--	--

Duplicate (BFD0406-DUP1)

Source: 2201337-04

Prepared & Analyzed: 04/20/22

pH	8.43		pH Units		8.43			0.00	20
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Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/21/22 15:09

Notes and Definitions

- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- I-04 Sample was analyzed out of recommended holding time per clients request.
- 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 27, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Wells Ranch 42-30 Wellhead

Work Order #2202365

Enclosed are the results of analyses for samples received by Summit Scientific on 02/28/22 14:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

Muri Premer

Project Manager



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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@7'	2202365-01	Soil	02/28/22 10:15	02/28/22 14:30
SS02@2.5'	2202365-02	Soil	02/28/22 10:18	02/28/22 14:30
SS03@6'	2202365-03	Soil	02/28/22 10:20	02/28/22 14:30
SS05@6'	2202365-05	Soil	02/28/22 10:26	02/28/22 14:30
SS07@6'	2202365-07	Soil	02/28/22 10:34	02/28/22 14:30
SS09@6'	2202365-09	Soil	02/28/22 10:40	02/28/22 14:30
BKG02@2.5'	2202365-10	Soil	02/28/22 11:20	02/28/22 14:30
BKG02@6'	2202365-11	Soil	02/28/22 11:25	02/28/22 14:30
BKG02@7'	2202365-12	Soil	02/28/22 11:35	02/28/22 14:30
BKG03@2.5'	2202365-13	Soil	02/28/22 11:50	02/28/22 14:30
BKG03@6'	2202365-14	Soil	02/28/22 12:00	02/28/22 14:30
BKG03@7'	2202365-15	Soil	02/28/22 12:05	02/28/22 14:30

Summit Scientific

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

S₂

2/2

Sample Receipt Checklist

S2 Work Order#

2202365

Client: Ppc / Hasman

Client Project ID: Wells Ranch 42-30 wellhead

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

Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Temp (°C)	9.1
-----------	-----

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON ICE
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input 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.

D. Hasman
Custodian Printed Name or Initials

2-28-22
Date/Time



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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

SS01@7'
2202365-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BFC0036	03/02/22	03/03/22	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 10:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		91.3 %		70-130		"	"	"	"	
Surrogate: Toluene-d8		98.3 %		70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.8 %		70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	240	50		mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		96.0 %		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: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

SS01@7'
2202365-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chrysene	0.00998	0.00500	mg/kg	1	BFC0078	03/04/22	03/06/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10		64.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		59.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.08	0.200	mg/kg dry	1	BFD0369	04/19/22	04/20/22	EPA 6020B	
Barium	25.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.57	0.400	"	"	"	"	"	"	
Lead	5.40	0.200	"	"	"	"	"	"	
Selenium	0.438	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	96.2		%	1	BFD0382	04/19/22	04/19/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

SS02@2.5'
2202365-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0557	0.0100	mg/L	1	BFC0439	03/21/22	03/29/22	EPA 6020B	

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

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	15.5	0.0560	mg/L dry	1	BFC0433	03/21/22	04/01/22	EPA 6020B	
Magnesium	1.28	0.0560	"	"	"	"	"	"	
Sodium	0.785	0.0560	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0515	0.00100	units	1	BFD0035	04/02/22	04/04/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.3		%	1	BFC0438	03/21/22	03/21/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.35	0.0100	mmhos/cm	1	BFC0017	03/01/22	03/01/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/27/22 10:47

SS02@2.5'
2202365-02 (Soil)

Summit Scientific

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

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.91		pH Units	1	BFC0020	03/01/22	03/01/22	EPA 9045D	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

SS03@6'
2202365-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	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 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.8 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.5 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		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: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

SS03@6'
2202365-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		62.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		48.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.21	0.200	mg/kg dry	1	BFD0369	04/19/22	04/20/22	EPA 6020B	
Barium	57.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.07	0.400	"	"	"	"	"	"	
Lead	2.84	0.200	"	"	"	"	"	"	
Selenium	0.558	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	BFD0382	04/19/22	04/19/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

SS05@6'
2202365-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	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 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.3 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		82.2 %	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

SS05@6'
2202365-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.93	0.200	mg/kg dry	1	BFD0369	04/19/22	04/20/22	EPA 6020B	
Barium	147	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.42	0.400	"	"	"	"	"	"	
Lead	4.90	0.200	"	"	"	"	"	"	
Selenium	0.781	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6		%	1	BFD0382	04/19/22	04/19/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

SS07@6'
2202365-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	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 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.6 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		83.7 %	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

SS07@6'
2202365-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		40.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.74	0.200	mg/kg dry	1	BFD0369	04/19/22	04/20/22	EPA 6020B	
Barium	92.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	5.35	0.400	"	"	"	"	"	"	
Lead	12.0	0.200	"	"	"	"	"	"	
Selenium	0.801	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.2		%	1	BFD0382	04/19/22	04/19/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

SS09@6'
2202365-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	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 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		96.3 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.8 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		76.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

SS09@6'
2202365-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		45.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.25	0.200	mg/kg dry	1	BFD0369	04/19/22	04/20/22	EPA 6020B	
Barium	69.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.81	0.400	"	"	"	"	"	"	
Lead	3.85	0.200	"	"	"	"	"	"	
Selenium	0.649	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.8		%	1	BFD0382	04/19/22	04/19/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

BKG02@2.5'
2202365-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.32	0.215	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	79.2	0.430	"	"	"	"	"	"	
Cadmium	ND	0.215	"	"	"	"	"	"	
Copper	3.56	0.430	"	"	"	"	"	"	
Lead	4.59	0.215	"	"	"	"	"	"	
Nickel	3.61	0.430	"	"	"	"	"	"	
Selenium	0.508	0.279	"	"	"	"	"	"	
Silver	0.0254	0.0215	"	"	"	"	"	"	
Zinc	14.2	0.430	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.1		%	1	BFC0438	03/21/22	03/21/22	Calculation	

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

Date Sampled: **02/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.02		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

BKG02@6'
2202365-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/28/22 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.39	0.211	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	84.0	0.421	"	"	"	"	"	"	
Cadmium	ND	0.211	"	"	"	"	"	"	
Copper	2.88	0.421	"	"	"	"	"	"	
Lead	4.20	0.211	"	"	"	"	"	"	
Nickel	3.44	0.421	"	"	"	"	"	"	
Selenium	0.496	0.274	"	"	"	"	"	"	
Silver	ND	0.0211	"	"	"	"	"	"	
Zinc	12.8	0.421	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/28/22 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.9		%	1	BFC0438	03/21/22	03/21/22	Calculation	

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

Date Sampled: **02/28/22 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.52		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

BKG02@7'
2202365-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/28/22 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.68	0.216	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	85.4	0.432	"	"	"	"	"	"	
Cadmium	ND	0.216	"	"	"	"	"	"	
Copper	4.25	0.432	"	"	"	"	"	"	
Lead	5.10	0.216	"	"	"	"	"	"	
Nickel	4.93	0.432	"	"	"	"	"	"	
Selenium	0.620	0.281	"	"	"	"	"	"	
Silver	0.0313	0.0216	"	"	"	"	"	"	
Zinc	17.3	0.432	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/28/22 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	92.7		%	1	BFC0438	03/21/22	03/21/22	Calculation	

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

Date Sampled: **02/28/22 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.51		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

BKG03@2.5'
2202365-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/28/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.43	0.215	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	67.8	0.431	"	"	"	"	"	"	
Cadmium	ND	0.215	"	"	"	"	"	"	
Copper	3.70	0.431	"	"	"	"	"	"	
Lead	4.49	0.215	"	"	"	"	"	"	
Nickel	3.81	0.431	"	"	"	"	"	"	
Selenium	0.541	0.280	"	"	"	"	"	"	
Silver	0.0217	0.0215	"	"	"	"	"	"	
Zinc	14.4	0.431	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/28/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	92.9		%	1	BFC0438	03/21/22	03/21/22	Calculation	

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

Date Sampled: **02/28/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.13		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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





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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

BKG03@6'
2202365-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/28/22 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.35	0.212	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	80.2	0.425	"	"	"	"	"	"	"
Cadmium	ND	0.212	"	"	"	"	"	"	"
Copper	2.86	0.425	"	"	"	"	"	"	"
Lead	4.10	0.212	"	"	"	"	"	"	"
Nickel	3.65	0.425	"	"	"	"	"	"	"
Selenium	0.492	0.276	"	"	"	"	"	"	"
Silver	0.0249	0.0212	"	"	"	"	"	"	"
Zinc	13.4	0.425	"	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/28/22 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.2		%	1	BFC0438	03/21/22	03/21/22	Calculation	

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

Date Sampled: **02/28/22 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.75		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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





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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

BKG03@7'
2202365-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **02/28/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.83	0.213	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	96.1	0.426	"	"	"	"	"	"	
Cadmium	ND	0.213	"	"	"	"	"	"	
Copper	3.65	0.426	"	"	"	"	"	"	
Lead	4.84	0.213	"	"	"	"	"	"	
Nickel	4.98	0.426	"	"	"	"	"	"	
Selenium	0.607	0.277	"	"	"	"	"	"	
Silver	0.0294	0.0213	"	"	"	"	"	"	
Zinc	17.8	0.426	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/28/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.0		%	1	BFC0438	03/21/22	03/21/22	Calculation	

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

Date Sampled: **02/28/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.75		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0036 - EPA 5030 Soil MS

Blank (BFC0036-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	0.0391		"	0.0400		97.6	70-130			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	70-130			

LCS (BFC0036-BS1)

Prepared: 03/02/22 Analyzed: 03/03/22

Benzene	0.0655	0.0020	mg/kg	0.0750		87.4	70-130			
Toluene	0.0670	0.0050	"	0.0750		89.3	70-130			
Ethylbenzene	0.0636	0.0050	"	0.0750		84.8	70-130			
m,p-Xylene	0.132	0.010	"	0.150		88.2	70-130			
o-Xylene	0.0689	0.0050	"	0.0750		91.8	70-130			
1,2,4-Trimethylbenzene	0.0707	0.0050	"	0.0750		94.3	70-130			
1,3,5-Trimethylbenzene	0.0677	0.0050	"	0.0750		90.3	70-130			
Naphthalene	0.0756	0.0038	"	0.0750		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0397		"	0.0400		99.2	70-130			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	70-130			

Matrix Spike (BFC0036-MS1)

Source: 2202363-03

Prepared: 03/02/22 Analyzed: 03/03/22

Benzene	0.0642	0.0020	mg/kg	0.0750	ND	85.6	70-130			
Toluene	0.0692	0.0050	"	0.0750	ND	92.2	70-130			
Ethylbenzene	0.0682	0.0050	"	0.0750	ND	90.9	70-130			
m,p-Xylene	0.140	0.010	"	0.150	ND	93.6	70-130			
o-Xylene	0.0739	0.0050	"	0.0750	ND	98.5	70-130			
1,2,4-Trimethylbenzene	0.0761	0.0050	"	0.0750	ND	101	70-130			
1,3,5-Trimethylbenzene	0.0737	0.0050	"	0.0750	ND	98.2	70-130			
Naphthalene	0.0902	0.0038	"	0.0750	ND	120	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0400		98.2	70-130			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	70-130			

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/27/22 10:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0036 - EPA 5030 Soil MS

Matrix Spike Dup (BFC0036-MSD1)	Source: 2202363-03			Prepared: 03/02/22 Analyzed: 03/03/22					
Benzene	0.0622	0.0020	mg/kg	0.0750	ND	83.0	70-130	3.09	30
Toluene	0.0664	0.0050	"	0.0750	ND	88.5	70-130	4.16	30
Ethylbenzene	0.0617	0.0050	"	0.0750	ND	82.3	70-130	9.93	30
m,p-Xylene	0.127	0.010	"	0.150	ND	84.5	70-130	10.2	30
o-Xylene	0.0661	0.0050	"	0.0750	ND	88.1	70-130	11.2	30
1,2,4-Trimethylbenzene	0.0699	0.0050	"	0.0750	ND	93.2	70-130	8.46	30
1,3,5-Trimethylbenzene	0.0668	0.0050	"	0.0750	ND	89.0	70-130	9.87	30
Naphthalene	0.0875	0.0038	"	0.0750	ND	117	70-130	2.97	30
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	70-130		
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	70-130		
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		97.9	70-130		

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/27/22 10:47

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFC0037 - EPA 3550A

Blank (BFC0037-BLK1)

Prepared: 03/02/22 Analyzed: 03/03/22

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

LCS (BFC0037-BS1)

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	435	50	mg/kg	500	87.0	70-130				
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Matrix Spike (BFC0037-MS1)

Source: 2202363-01

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	480	50	mg/kg	500	117	72.6	70-130			
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Matrix Spike Dup (BFC0037-MSD1)

Source: 2202363-01

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	475	50	mg/kg	500	117	71.6	70-130	1.03	20	
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Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0078 - EPA 5030 Soil MS

Blank (BFC0078-BLK1)

Prepared: 03/04/22 Analyzed: 03/06/22

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	0.0241		"	0.0333		72.3	40-150			
Surrogate: Fluoranthene-d10	0.0236		"	0.0333		70.9	40-150			

LCS (BFC0078-BS1)

Prepared: 03/04/22 Analyzed: 03/06/22

Acenaphthene	0.0221	0.00500	mg/kg	0.0333		66.3	31-137			
Anthracene	0.0225	0.00500	"	0.0333		67.6	30-120			
Benzo (a) anthracene	0.0254	0.00500	"	0.0333		76.2	30-120			
Benzo (a) pyrene	0.0187	0.00500	"	0.0333		56.1	30-120			
Benzo (b) fluoranthene	0.0188	0.00500	"	0.0333		56.3	30-120			
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333		53.7	30-120			
Chrysene	0.0244	0.00500	"	0.0333		73.3	30-120			
Dibenz (a,h) anthracene	0.0231	0.00500	"	0.0333		69.4	30-120			
Fluoranthene	0.0211	0.00500	"	0.0333		63.2	30-120			
Fluorene	0.0225	0.00500	"	0.0333		67.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0152	0.00500	"	0.0333		45.5	30-120			
Pyrene	0.0261	0.00500	"	0.0333		78.2	35-142			
1-Methylnaphthalene	0.0233	0.00500	"	0.0333		69.9	35-142			
2-Methylnaphthalene	0.0224	0.00500	"	0.0333		67.2	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0247		"	0.0333		74.0	40-150			
Surrogate: Fluoranthene-d10	0.0220		"	0.0333		65.9	40-150			

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0078 - EPA 5030 Soil MS

Matrix Spike (BFC0078-MS1)	Source: 2202284-01			Prepared: 03/04/22 Analyzed: 03/06/22						
Acenaphthene	0.0218	0.00500	mg/kg	0.0333	ND	65.5	31-137			
Anthracene	0.0229	0.00500	"	0.0333	ND	68.6	30-120			
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	ND	76.7	30-120			
Benzo (a) pyrene	0.0189	0.00500	"	0.0333	ND	56.7	30-120			
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.4	30-120			
Benzo (k) fluoranthene	0.0196	0.00500	"	0.0333	ND	58.9	30-120			
Chrysene	0.0247	0.00500	"	0.0333	ND	74.2	30-120			
Dibenz (a,h) anthracene	0.0155	0.00500	"	0.0333	ND	46.4	30-120			
Fluoranthene	0.0227	0.00500	"	0.0333	ND	68.0	30-120			
Fluorene	0.0221	0.00500	"	0.0333	ND	66.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0104	0.00500	"	0.0333	ND	31.1	30-120			
Pyrene	0.0260	0.00500	"	0.0333	ND	78.0	35-142			
1-Methylnaphthalene	0.0230	0.00500	"	0.0333	ND	69.1	15-130			
2-Methylnaphthalene	0.0207	0.00500	"	0.0333	ND	62.1	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0233</i>		<i>"</i>	<i>0.0333</i>		<i>69.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0236</i>		<i>"</i>	<i>0.0333</i>		<i>70.9</i>	<i>40-150</i>			

Matrix Spike Dup (BFC0078-MSD1)	Source: 2202284-01			Prepared: 03/04/22 Analyzed: 03/06/22						
Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.6	31-137	11.1	30	
Anthracene	0.0210	0.00500	"	0.0333	ND	63.1	30-120	8.47	30	
Benzo (a) anthracene	0.0252	0.00500	"	0.0333	ND	75.5	30-120	1.63	30	
Benzo (a) pyrene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	1.42	30	
Benzo (b) fluoranthene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	2.79	30	
Benzo (k) fluoranthene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	1.78	30	
Chrysene	0.0237	0.00500	"	0.0333	ND	71.2	30-120	4.08	30	
Dibenz (a,h) anthracene	0.0141	0.00500	"	0.0333	ND	42.3	30-120	9.37	30	
Fluoranthene	0.0234	0.00500	"	0.0333	ND	70.3	30-120	3.29	30	
Fluorene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	8.55	30	
Indeno (1,2,3-cd) pyrene	0.0105	0.00500	"	0.0333	ND	31.5	30-120	1.27	30	
Pyrene	0.0274	0.00500	"	0.0333	ND	82.2	35-142	5.19	30	
1-Methylnaphthalene	0.0220	0.00500	"	0.0333	ND	66.0	15-130	4.66	50	
2-Methylnaphthalene	0.0206	0.00500	"	0.0333	ND	61.8	15-130	0.350	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0223</i>		<i>"</i>	<i>0.0333</i>		<i>66.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0222</i>		<i>"</i>	<i>0.0333</i>		<i>66.7</i>	<i>40-150</i>			

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/27/22 10:47

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

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

Batch BFC0439 - EPA 3050B

Blank (BFC0439-BLK1)

Prepared: 03/21/22 Analyzed: 03/29/22

Boron ND 0.0100 mg/L

LCS (BFC0439-BS1)

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 5.26 0.0100 mg/L 5.00 105 80-120

Duplicate (BFC0439-DUP1)

Source: 2202350-01

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 0.116 0.0100 mg/L 0.123 5.86 20

Matrix Spike (BFC0439-MS1)

Source: 2202350-01

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 5.52 0.0100 mg/L 5.00 0.123 108 75-125

Matrix Spike Dup (BFC0439-MSD1)

Source: 2202350-01

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 5.98 0.0100 mg/L 5.00 0.123 117 75-125 7.97 25

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/27/22 10:47

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFC0436 - EPA 3050B

Blank (BFC0436-BLK1)

Prepared: 03/21/22 Analyzed: 03/22/22

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 (BFC0436-BS1)

Prepared: 03/21/22 Analyzed: 03/22/22

Arsenic	34.2	0.200	mg/kg wet	40.0	85.5	80-120
Barium	33.7	0.400	"	40.0	84.4	80-120
Cadmium	1.85	0.200	"	2.00	92.7	80-120
Copper	34.1	0.400	"	40.0	85.2	80-120
Lead	16.8	0.200	"	20.0	83.9	80-120
Nickel	32.9	0.400	"	40.0	82.2	80-120
Selenium	3.73	0.260	"	4.00	93.2	80-120
Silver	1.75	0.0200	"	2.00	87.7	80-120
Zinc	36.4	0.400	"	40.0	90.9	80-120

Duplicate (BFC0436-DUP1)

Source: 2202303-01

Prepared: 03/21/22 Analyzed: 03/22/22

Arsenic	1.45	0.219	mg/kg dry	1.48	1.45	20	
Barium	74.9	0.438	"	60.5	21.2	20	QR-03
Cadmium	0.179	0.219	"	0.151	17.3	20	
Copper	8.21	0.438	"	6.25	27.1	20	QR-03
Lead	18.7	0.219	"	14.2	26.8	20	QR-03
Nickel	6.38	0.438	"	5.18	20.8	20	QR-03
Selenium	0.567	0.285	"	0.448	23.4	20	QR-03
Silver	0.0378	0.0219	"	0.0349	7.92	20	
Zinc	33.6	0.438	"	27.8	18.9	20	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFC0436 - EPA 3050B

Matrix Spike (BFC0436-MS1)	Source: 2202303-01			Prepared: 03/21/22 Analyzed: 03/22/22							
Arsenic	41.6	0.219	mg/kg dry	43.8	1.48	91.6	75-125				
Barium	103	0.438	"	43.8	60.5	96.5	75-125				
Cadmium	2.07	0.219	"	2.19	0.151	87.8	75-125				
Copper	43.6	0.438	"	43.8	6.25	85.4	75-125				
Lead	31.7	0.219	"	21.9	14.2	79.5	75-125				
Nickel	42.1	0.438	"	43.8	5.18	84.3	75-125				
Selenium	3.46	0.285	"	4.38	0.448	68.9	75-125				QR-03
Silver	1.80	0.0219	"	2.19	0.0349	80.7	75-125				
Zinc	76.5	0.438	"	43.8	27.8	111	75-125				

Matrix Spike Dup (BFC0436-MSD1)	Source: 2202303-01			Prepared: 03/21/22 Analyzed: 03/22/22							
Arsenic	39.4	0.219	mg/kg dry	43.8	1.48	86.6	75-125	5.47	25		
Barium	109	0.438	"	43.8	60.5	111	75-125	5.96	25		
Cadmium	2.18	0.219	"	2.19	0.151	92.7	75-125	5.08	25		
Copper	43.5	0.438	"	43.8	6.25	85.2	75-125	0.190	25		
Lead	32.6	0.219	"	21.9	14.2	83.8	75-125	2.89	25		
Nickel	41.6	0.438	"	43.8	5.18	83.1	75-125	1.18	25		
Selenium	3.53	0.285	"	4.38	0.448	70.3	75-125	1.80	25		QR-03
Silver	1.88	0.0219	"	2.19	0.0349	84.3	75-125	4.31	25		
Zinc	74.9	0.438	"	43.8	27.8	107	75-125	2.16	25		

Batch BFD0369 - EPA 3050B

Blank (BFD0369-BLK1)	Prepared: 04/19/22 Analyzed: 04/20/22										
Arsenic	ND	0.200	mg/kg wet								
Barium	ND	0.400	"								
Cadmium	ND	0.200	"								
Copper	ND	0.400	"								
Lead	ND	0.200	"								
Selenium	ND	0.260	"								

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFD0369 - EPA 3050B

LCS (BFD0369-BS1)

Prepared: 04/19/22 Analyzed: 04/20/22

Arsenic	37.5	0.200	mg/kg wet	40.0		93.8	80-120		
Barium	33.8	0.400	"	40.0		84.5	80-120		
Cadmium	1.79	0.200	"	2.00		89.7	80-120		
Copper	33.8	0.400	"	40.0		84.5	80-120		
Lead	16.7	0.200	"	20.0		83.5	80-120		
Selenium	3.76	0.260	"	4.00		94.0	80-120		

Duplicate (BFD0369-DUP1)

Source: 2202321-08

Prepared: 04/19/22 Analyzed: 04/20/22

Arsenic	1.71	0.200	mg/kg dry		1.92		11.4	20
Barium	61.3	0.400	"		70.7		14.1	20
Cadmium	0.162	0.200	"		0.195		18.5	20
Copper	7.29	0.400	"		8.82		19.0	20
Lead	8.15	0.200	"		9.83		18.7	20
Selenium	0.745	0.260	"		0.849		13.0	20

Matrix Spike (BFD0369-MS1)

Source: 2202321-08

Prepared: 04/19/22 Analyzed: 04/20/22

Arsenic	34.5	0.200	mg/kg dry	41.8	1.92	77.8	75-125	
Barium	122	0.400	"	41.8	70.7	122	75-125	
Cadmium	2.12	0.200	"	2.09	0.195	92.2	75-125	
Copper	42.9	0.400	"	41.8	8.82	81.4	75-125	
Lead	25.8	0.200	"	20.9	9.83	76.5	75-125	
Selenium	4.04	0.260	"	4.18	0.849	76.2	75-125	

Matrix Spike Dup (BFD0369-MSD1)

Source: 2202321-08

Prepared: 04/19/22 Analyzed: 04/20/22

Arsenic	37.2	0.200	mg/kg dry	41.8	1.92	84.2	75-125	7.48	25
Barium	103	0.400	"	41.8	70.7	76.6	75-125	16.9	25
Cadmium	2.05	0.200	"	2.09	0.195	88.9	75-125	3.32	25
Copper	44.5	0.400	"	41.8	8.82	85.2	75-125	3.57	25
Lead	26.9	0.200	"	20.9	9.83	81.5	75-125	3.96	25
Selenium	4.03	0.260	"	4.18	0.849	76.1	75-125	0.162	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/27/22 10:47

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFC0531 - 3060A Mod

Blank (BFC0531-BLK1)

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFC0531-BS1)

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent 26.6 0.30 mg/kg wet 25.0 107 80-120

Duplicate (BFC0531-DUP1)

Source: 2202108-02

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFC0531-MS1)

Source: 2202108-02

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent 27.6 0.30 mg/kg dry 26.7 ND 103 75-125

Matrix Spike Dup (BFC0531-MSD1)

Source: 2202108-02

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent 31.1 0.30 mg/kg dry 26.7 ND 116 75-125 11.8 20

Summit Scientific

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



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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/27/22 10:47

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

Summit Scientific

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

Batch BFC0433 - General Preparation

Blank (BFC0433-BLK1)

Prepared: 03/21/22 Analyzed: 04/01/22

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

LCS (BFC0433-BS1)

Prepared: 03/21/22 Analyzed: 04/01/22

Calcium	5.09	0.0500	mg/L wet	5.00		102	70-130			
Magnesium	5.48	0.0500	"	5.00		110	70-130			
Sodium	5.04	0.0500	"	5.00		101	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/27/22 10:47

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

Summit Scientific

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

Batch BFC0438 - General Preparation

Duplicate (BFC0438-DUP1)		Source: 2202350-01			Prepared & Analyzed: 03/21/22			
% Solids	90.7		%		94.2		3.74	20

Batch BFD0382 - General Preparation

Duplicate (BFD0382-DUP1)		Source: 2201381-04			Prepared & Analyzed: 04/19/22			
% Solids	88.8		%		89.3		0.497	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/27/22 10:47

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

Summit Scientific

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

Batch BFC0017 - General Preparation

Blank (BFC0017-BLK1)

Prepared & Analyzed: 03/01/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFC0017-BS1)

Prepared & Analyzed: 03/01/22

Specific Conductance (EC) 0.147 0.0100 mmhos/cm 0.150 98.1 95-105

Duplicate (BFC0017-DUP1)

Source: 2202357-01

Prepared & Analyzed: 03/01/22

Specific Conductance (EC) 0.557 0.0100 mmhos/cm 0.577 3.58 20

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/27/22 10:47

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

Summit Scientific

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

Batch BFC0020 - General Preparation

LCS (BFC0020-BS1)

Prepared & Analyzed: 03/01/22

pH 9.12 pH Units 9.18 99.3 95-105

Duplicate (BFC0020-DUP1)

Source: 2202357-01

Prepared & Analyzed: 03/01/22

pH 8.68 pH Units 8.67 0.115 20

Batch BFD0530 - General Preparation

LCS (BFD0530-BS1)

Prepared & Analyzed: 04/25/22

pH 9.14 pH Units 9.18 99.6 95-105

Duplicate (BFD0530-DUP1)

Source: 2202321-08

Prepared & Analyzed: 04/25/22

pH 7.26 pH Units 7.25 0.138 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: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/22 10:47

Notes and Definitions

- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- I-04 Sample was analyzed out of recommended holding time per clients request.
- 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

December 14, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Wells Ranch 42-30 Wellhead

Work Order #2212184

Enclosed are the results of analyses for samples received by Summit Scientific on 12/08/22 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury

President



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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01@6'	2212184-01	Soil	12/08/22 10:45	12/08/22 18:00
SB01@7'	2212184-02	Soil	12/08/22 10:50	12/08/22 18:00
SB01@8'	2212184-03	Soil	12/08/22 10:55	12/08/22 18:00
SB02@6'	2212184-07	Soil	12/08/22 11:20	12/08/22 18:00
SB03@6'	2212184-13	Soil	12/08/22 11:55	12/08/22 18:00
SB04@6'	2212184-19	Soil	12/08/22 11:24	12/08/22 18:00
SB05@6'	2212184-22	Soil	12/08/22 10:44	12/08/22 18:00
SB05@7'	2212184-23	Soil	12/08/22 10:49	12/08/22 18:00
SB05@8'	2212184-24	Soil	12/08/22 10:59	12/08/22 18:00
SB06@6'	2212184-28	Soil	12/08/22 11:36	12/08/22 18:00
SB07@6'	2212184-34	Soil	12/08/22 10:58	12/08/22 18:00
SB08@6'	2212184-40	Soil	12/08/22 12:12	12/08/22 18:00
BKG04@2.5'	2212184-43	Soil	12/08/22 12:18	12/08/22 18:00
BKG04@4'	2212184-44	Soil	12/08/22 12:22	12/08/22 18:00
BKG04@5'	2212184-45	Soil	12/08/22 12:27	12/08/22 18:00
BKG04@6'	2212184-46	Soil	12/08/22 12:32	12/08/22 18:00
BKG04@7'	2212184-47	Soil	12/08/22 12:37	12/08/22 18:00
BKG04@8'	2212184-48	Soil	12/08/22 12:42	12/08/22 18:00
BKG05@2.5'	2212184-49	Soil	12/08/22 12:20	12/08/22 18:00
BKG05@4'	2212184-50	Soil	12/08/22 12:25	12/08/22 18:00
BKG05@5'	2212184-51	Soil	12/08/22 12:30	12/08/22 18:00
BKG05@6'	2212184-52	Soil	12/08/22 12:35	12/08/22 18:00
BKG05@7'	2212184-53	Soil	12/08/22 12:40	12/08/22 18:00
BKG05@8'	2212184-54	Soil	12/08/22 12:45	12/08/22 18:00

Summit Scientific

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

Summit Scientific

S₂

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

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: Wells Ranch 42-30 Wellhead

Sampler Name: Aaron Otilar

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	TRIB*(1,2,4)&(1,3,5)	PAH - 915	Metals - 915	
1	SB01e6'	12/8/22	1045	1			X			X							X			
2	SB01e7'		1050	1													X			
3	SB01e8'		1055	1													X			
4	SB02e 2.5'		1105	1																X
5	SB02e 4'		1110	1																X
6	SB02e 5'		1115	1																X
7	SB02e 6'		1120	1													X			X
8	SB02e 7'		1125	1																X
9	SB02e 8'		1130	1																X
10	SB03e 2.5'		1140	1																X

Relinquished by: *[Signature]* Date/Time: 12/8 1710

Received by: *[Signature]* Date/Time: 12/8 1710

Turn Around Time (Check)
 Same Day — 72 hours
 24 hours — Standard
 48 hours —

Notes:
 * : Barium, Selenium
 † : Selenium

Relinquished by: Date/Time:

Received by: *[Signature]* Date/Time: 12/8 18:00

Sample Integrity:
 Temperature Upon Receipt: 4.9
 Samples Intact: Yes No

Summit Scientific

S₂

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

Client: PDC/Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@pdce.com

City/State/Zip: Broomfield CO 80020

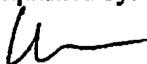
Phone: 303-487-1228

Project Name: Wells Ranch 42-30 Wellhead

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron - HWS	TMB's (1,2,4) & (1,3,5)	PAH - 915		Metals - 915
1	SB03 @ 4'	12/8/22	1145	1			X			X										X
2	SB03 @ 5'		1150	1																X
3	SB03 @ 6'		1155	1																X
4	SB03 @ 7'		1200	1																X
5	SB03 @ 8'		1205	1																X
6	SB04 @ 2.5'		1105	1																X
7	SB04 @ 4'		1114	1																X
8	SB04 @ 5'		1119	1																X
9	SB04 @ 6'		1124	1																X
10	SB04 @ 7'		1129	1																X

Relinquished by: 	Date/Time: 12/8/22	Received by: 	Date/Time: 12/8/22 1710	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: 4.9 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: * : Barium, Selenium † : Selenium
Relinquished by:	Date/Time:	Received by:	Date/Time: 12/8/22 1800		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

22121844

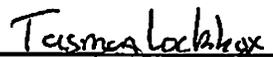
Summit Scientific

S₂

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

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: Wells Ranch 42-30 Wellhead
Sampler Name: Aaron Otilar 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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,2,5)	PAH - 915	Metals - 915	+	on Hold
1	SB07e2.5	12/8/22	1043	1			X			X										X	
2	SB 07 e 4		1048	1																X	
3	SB 07 e 5		1053	1																X	
4	SB 07 e 6		1058	1																X	
5	SB 07 e 7		1103	1																X	
6	SB 07 e 8		1108	1																X	
7	SB08 e 2.5		1157	1																X	
8	SB08 e 4		1202	1																X	
9	SB08 e 5		1207	1																X	
10	SB08 e 6		1212	1																X	

Relinquished by: 	Date/Time: 12/8/1710	Received by: 	Date/Time: 12/8 1710	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: 4.8 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: * Barium, Selenium † Selenium
Relinquished by:	Date/Time:	Received by:	Date/Time: 12/8 18:00		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

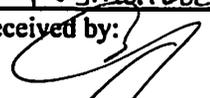
Summit Scientific

S₂

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

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: Wells Ranch 42-30 Wellhead
Sampler Name: Aaron Otilar 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	TMIB's(1,2,4)&(1,3,5)		PAH - 915
1	SB08 e7	12/8/22	1217	1			X			X								X	on Hold
2	SB08 e8		1222															X	
3	BK04 e2.5		1218														X		
4	BK04 e4		1222																
5	BK04 e5		1227																
6	BK04 e6		1232																
7	BK04 e7		1237																
8	BK04 e8		1242																
9	BK05 e 2.5		1220																
10	BK05 e 4		1225																

Relinquished by: 	Date/Time: 12/8 17:10	Received by: Tasman Locksbox	Date/Time: 12/8 17:10	Turn Around Time (Check) Same Day — 72 hours 24 hours — Standard <input checked="" type="checkbox"/> 48 hours — Sample Integrity: Temperature Upon Receipt: <input checked="" type="checkbox"/> Samples Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Notes: + Barium, Selenium + Selenium
Relinquished by:	Date/Time:	Received by: 	Date/Time: 12/8 18:00		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

2212184-6

Summit Scientific

S₂

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

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: Wells Ranch 42-30 Wellhead
Sampler Name: Aaron Otilar 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	TMIB's(1,2,4)&(1,3,5)	PAH - 915		Metals - 915*	
1	Bk605@5'	12/18/22	1230	1			X			X											
2	Bk605@6'	↓	1235	↓																	
3	Bk605@7'	↓	1240	↓																	
4	Bk605@8'	↓	1245	↓																	
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 12/18 17:10	Received by: <u>Tasman Lockbox</u>	Date/Time: 12/18 17:10	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: <u>4.9</u> Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: <u>* Barium, Selenium</u>
Relinquished by:	Date/Time:	Received by: 	Date/Time: 12/18 18:00		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2212184

Client: PDC/Tasman Client Project ID: Wells Ranch 42-30 Wellhead

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

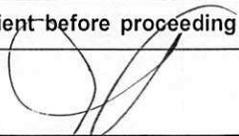
Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) Thermometer #

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

Additional Comments (if any):

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


Custodian Printed Name

12.8.22
Date/Time



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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB01@6'
2212184-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	114	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.547	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	89.6		%	1	BFL0344	12/13/22	12/14/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB01@7'
2212184-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	69.2	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.357	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	95.4		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB01@8'
2212184-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 10:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	14.1	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.176	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 10:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	97.2		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB02@6'
2212184-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	96.2	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.461	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.5		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB03@6'
2212184-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 11:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	76.8	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.471	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 11:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.6		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB04@6'
2212184-19 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 11:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	27.2	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.336	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 11:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.1		%	1	BFL0344	12/13/22	12/14/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB05@6'
2212184-22 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 10:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Selenium	0.490	0.260	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 10:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	92.3		%	1	BFL0344	12/13/22	12/14/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB05@7'
2212184-23 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 10:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Selenium	0.306	0.260	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 10:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	97.9		%	1	BFL0344	12/13/22	12/14/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB05@8'
2212184-24 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 10:59**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Selenium	0.360	0.260	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 10:59**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	95.8		%	1	BFL0344	12/13/22	12/14/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB06@6'
2212184-28 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 11:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Selenium	0.615	0.260	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 11:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	91.2		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB07@6'
2212184-34 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 10:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Selenium	0.410	0.260	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 10:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	92.9		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

SB08@6'
2212184-40 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Selenium	0.428	0.260	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	90.9		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG04@2.5'
2212184-43 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	88.9	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.545	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	90.1		%	1	BFL0344	12/13/22	12/14/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG04@4'
2212184-44 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	69.7	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.450	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	91.8		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG04@5'
2212184-45 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	130	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.538	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	88.5		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG04@6'
2212184-46 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	53.2	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.338	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	95.1		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG04@7'
2212184-47 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	21.3	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.311	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	97.8		%	1	BFL0344	12/13/22	12/14/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG04@8'
2212184-48 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	17.9	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.287	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	97.4		%	1	BFL0344	12/13/22	12/14/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG05@2.5'
2212184-49 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	76.9	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.423	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.1		%	1	BFL0344	12/13/22	12/14/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG05@4'
2212184-50 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	77.9	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.469	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	95.1		%	1	BFL0344	12/13/22	12/14/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG05@5'
2212184-51 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	20.0	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.296	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	98.1		%	1	BFL0344	12/13/22	12/14/22	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: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG05@6'
2212184-52 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	31.3	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.403	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	97.3		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG05@7'
2212184-53 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	25.4	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.308	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	97.5		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

BKG05@8'
2212184-54 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **12/08/22 12:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	16.4	0.400	mg/kg dry	1	BFL0280	12/10/22	12/12/22	EPA 6020B	
Selenium	0.320	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/08/22 12:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	98.0		%	1	BFL0344	12/13/22	12/14/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BFL0280 - EPA 3050B

Blank (BFL0280-BLK1)

Prepared: 12/10/22 Analyzed: 12/12/22

Barium	ND	0.400	mg/kg wet							
Selenium	ND	0.260	"							

LCS (BFL0280-BS1)

Prepared: 12/10/22 Analyzed: 12/12/22

Barium	44.2	0.400	mg/kg wet	40.0	111	80-120				
Selenium	4.54	0.260	"	4.00	114	80-120				

Duplicate (BFL0280-DUP1)

Source: 2212184-01

Prepared: 12/10/22 Analyzed: 12/12/22

Barium	138	0.400	mg/kg dry		114			18.7	20	
Selenium	0.549	0.260	"		0.547			0.514	20	

Matrix Spike (BFL0280-MS1)

Source: 2212184-01

Prepared: 12/10/22 Analyzed: 12/12/22

Barium	225	0.400	mg/kg dry	44.6	114	247	75-125			QM-02
Selenium	4.34	0.260	"	4.46	0.547	85.0	75-125			

Matrix Spike Dup (BFL0280-MSD1)

Source: 2212184-01

Prepared: 12/10/22 Analyzed: 12/12/22

Barium	186	0.400	mg/kg dry	44.6	114	161	75-125	18.8	25	QM-02
Selenium	4.86	0.260	"	4.46	0.547	96.5	75-125	11.2	25	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/14/22 15:11

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

Summit Scientific

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

Batch BFL0344 - General Preparation

Duplicate (BFL0344-DUP1)	Source: 2212184-01		Prepared: 12/13/22 Analyzed: 12/14/22		
% Solids	89.7	%	89.6	0.0505	20

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/14/22 15:11

Notes and Definitions

- QM-02 The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference