

Analytical Results
Former Witwer 34,44-6D Tank Battery

TABLE 1
FORMER WITWER 34, 44-6D TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS

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)
Residential SSL^(1,2)			1.2	490	5.8	58	30	27	2	500
Protection of Groundwater SSL^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500
SEP01-FL @ 4'	11/17/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
SEP01-DL @ 4'	11/17/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
PWV01-B @ 4'	11/17/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
PWV01-W @ 2.5'	11/17/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST03-B @ 4'	11/19/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST03-N @ 2.5'	11/19/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST02-B @ 4'	11/19/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST02-S @ 2.5'	11/19/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST01-B @ 4'	11/19/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST01-N @ 2.5'	11/19/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50

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.

COGCC = Colorado Oil and Gas Conservation Commission

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

TVPH-GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TEPH-DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH-ORO = Total extractable petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

TMB = Trimethylbenzene

ft. = Feet

bgs = Below ground surface

TABLE 2
FORMER WITWER 34, 44-6D TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitability for Reclamation Standard ⁽¹⁾			6-8.3	<4	<6	2
PWV01-B @ 4'	11/17/2021	4 ft. bgs	8.14	0.48	1.390	0.4650
PWV01-W @ 2.5'	11/17/2021	2.5 ft. bgs	8.13	0.187	0.126	0.2840
AST03-B @ 4'	11/19/2021	4 ft. bgs	7.93	0.32	0.342	0.0524
AST03-N @ 2.5'	11/17/2021	2.5 ft. bgs	7.99	0.176	0.129	< 0.0100
AST02-B @ 4'	11/19/2021	4 ft. bgs	8.11	0.257	0.286	0.0219
AST02-S @ 2.5'	11/19/2021	2.5 ft. bgs	8.08	0.552	0.654	0.1040
AST01-B @ 4'	11/19/2021	4 ft. bgs	8.08	0.174	0.118	0.0308
AST01-N @ 2.5'	11/19/2021	2.5 ft. bgs	7.99	0.768	1.78	0.1150
BKG01 @ 0-6"	11/17/2021	0-6 in. bgs	7.77	NA	2.05	NA
BKG01 @ 2.5'	11/17/2021	2.5 ft. bgs	7.50	NA	3.63	NA
BKG01 @ 4'	11/17/2021	4 ft. bgs	7.63	NA	5.05	NA

Notes:

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

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = Millimhos per centimeter

mg/L = Milligrams per liter

in. = inches

ft. = Feet

bgs = Below ground surface

TABLE 3
FORMER WITWER 34, 44-6D TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS - PAHS

Sample ID	Date Sampled	Depth	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL^(1,2)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL^(1,2,3)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
AST03-B @ 4'	11/19/2021	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
AST03-N @ 2.5'	11/19/2021	2.5 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST02-B @ 4'	11/19/2021	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
AST02-S @ 2.5'	11/19/2021	2.5 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST01-B @ 4'	11/19/2021	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
AST01-N @ 2.5'	11/19/2021	2.5 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Notes:

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

COGCC = Colorado Oil and Gas Conservation Commission

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

PAHs = Polycyclic aromatic hydrocarbons

Benzo(a) = Benzantracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzo(a)fluoranthene

Benzo(k) = Benzo(a)fluoranthene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

M = Methylnaphthalene

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

TABLE 4
FORMER WITWER 34, 44-6D TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
METALS

Sample ID	Date Sampled	Depth	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ^(1,2)			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^(1,2,3)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
AST03-B @ 4'	11/19/2021	4 ft. bgs	2.43	117	< 0.243	<0.30 ⁽⁴⁾	4.98	5.12	5.57	1.20	0.0247	21.5
AST03-N @ 2.5'	11/19/2021	2.5 ft. bgs	2.38	70.6	< 0.230	<0.30 ⁽⁴⁾	6.86	3.70	5.05	0.991	< 0.0230	20.5
AST03-W @ 2.5'	11/19/2021	2.5 ft. bgs	2.67	84.2	NA	NA	NA	NA	NA	0.902	NA	NA
AST03-S @ 2.5'	11/19/2021	2.5 ft. bgs	2.32	85.0	NA	NA	NA	NA	NA	0.805	NA	NA
AST03-E @ 2.5'	11/19/2021	2.5 ft. bgs	2.23	84.7	NA	NA	NA	NA	NA	0.787	NA	NA
AST02-B @ 4'	11/19/2021	4 ft. bgs	1.73	79.1	< 0.218	<0.30 ⁽⁴⁾	3.63	3.78	3.73	0.899	< 0.0218	14.4
AST02-S @ 2.5'	11/19/2021	2.5 ft. bgs	2.32	83.5	< 0.225	<0.30 ⁽⁴⁾	6.06	8.06	4.93	1.04	< 0.0225	21.1
AST02-N @ 2.5'	11/19/2021	2.5 ft. bgs	3.97	85.8	NA	NA	NA	NA	NA	0.819	NA	NA
AST02-W @ 2.5'	11/19/2021	2.5 ft. bgs	2.96	94.6	NA	NA	NA	NA	NA	0.947	NA	NA
AST02-E @ 2.5'	11/19/2021	2.5 ft. bgs	3.59	64.2	NA	NA	NA	NA	NA	0.810	NA	NA
AST01-B @ 4'	11/19/2021	4 ft. bgs	2.08	104	< 0.225	<0.30 ⁽⁴⁾	4.88	4.90	4.66	0.977	< 0.0225	18.1
AST01-N @ 2.5'	11/19/2021	2.5 ft. bgs	1.88	104	< 0.228	<0.30 ⁽⁴⁾	4.90	4.76	4.78	1.07	0.0237	18.4
AST01-W @ 2.5'	11/19/2021	2.5 ft. bgs	3.18	106	NA	NA	NA	NA	NA	0.891	NA	NA
AST01-S @ 2.5'	11/19/2021	2.5 ft. bgs	2.86	97.3	NA	NA	NA	NA	NA	0.997	NA	NA
AST01-E @ 2.5'	11/19/2021	2.5 ft. bgs	2.54	96.6	NA	NA	NA	NA	NA	0.815	NA	NA
BKG01 @ 0-6"	11/17/2021	0-6 in. bgs	2.45	104	< 0.215	<0.30 ⁽⁴⁾	8.09	6.59	5.85	0.836	0.0412	31.0
BKG01 @ 2.5'	11/17/2021	2.5 ft. bgs	2.36	151	< 0.219	<0.30 ⁽⁴⁾	6.19	6.49	6.03	0.873	0.0344	26.0
BKG01 @ 4'	11/17/2021	4 ft. bgs	1.89	97.6	< 0.211	<0.30 ⁽⁴⁾	3.61	4.70	4.21	0.648	< 0.0211	16.7

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.
 - Compound falls within COGCC Table 915-1 Footnote 9.
- COGCC = Colorado Oil and Gas Conservation Commission
(<) = Analytical result is less than the indicated laboratory reporting limit.
mg/kg = Milligrams per kilogram
in. = Inches
ft. = Feet
bgs = Below ground surface
BOLD = Analytical result is in exceedance of applicable standard.
BOLD = Analytical result is in exceedance of applicable standard, but within 1.25x background concentration.

TABLE 5
FORMER WITWER 34, 44-6D TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
ECD01 @ 0-6"	11/17/2021	0-6 in. bgs	40.425045	-104.587734	1.1	4.9
ECD02 @ 0-6"	11/17/2021	0-6 in. bgs	40.425014	-104.587717	1.1	5.7
MH01 @ 0-6"	11/17/2021	0-6 in. bgs	40.424997	-104.587645	1.1	5.4
SEP01-FL @ 4'	11/17/2021	4 ft. bgs	40.424963	-104.587605	1.2	6.1
SEP01-DL @ 4'	11/17/2021	4 ft. bgs	40.424945	-104.587546	1.1	6.0
PWV01-B @ 4'	11/17/2021	4 ft. bgs	40.424762	-104.587385	1.1	5.0
PWV01-N @ 2.5'	11/17/2021	2.5 ft. bgs	40.424785	-104.587392	1.1	4.5
PWV01-W @ 2.5'	11/17/2021	2.5 ft. bgs	40.424764	-104.587411	1.1	7.2
WDL @ 4'	11/17/2021	4 ft. bgs	40.424758	-104.587395	1.1	7.2
PWV01-S @ 2.5'	11/17/2021	2.5 ft. bgs	40.424753	-104.587373	1.1	5.8
PWV01-E @ 2.5'	11/17/2021	2.5 ft. bgs	40.424771	-104.587366	1.1	5.3
AST01 @ 0-6"	11/17/2021	0-6 in. bgs	40.424723	-104.587358	1.1	1,543
AST02 @ 0-6"	11/17/2021	0-6 in. bgs	40.424692	-104.587315	1.1	62.2
AST03 @ 0-6"	11/17/2021	0-6 in. bgs	40.424662	-104.587289	1.1	224
BKG01 @ 0-6"	11/17/2021	0-6 in. bgs	40.425107	-104.587383	1.1	4.3
BKG01 @ 2.5'	11/17/2021	2.5 ft. bgs	40.425107	-104.587383	1.1	4.2
BKG01 @ 4'	11/17/2021	4 ft. bgs	40.425107	-104.587383	1.1	2.1
AST01-B @ 4'	11/19/2021	4 ft. bgs	40.424729	-104.587363	1.0	5.3
AST01-N @ 2.5'	11/19/2021	2.5 ft. bgs	40.424740	-104.587359	1.0	6.7
AST01-W @ 2.5'	11/19/2021	2.5 ft. bgs	40.424729	-104.587372	1.0	6.2
AST01-S @ 2.5'	11/19/2021	2.5 ft. bgs	40.424719	-104.587357	1.1	5.5
AST01-E @ 2.5'	11/19/2021	2.5 ft. bgs	40.424725	-104.587343	1.1	6.2
AST02-B @ 4'	11/19/2021	4 ft. bgs	40.424691	-104.587334	1.0	4.7
AST02-S @ 2.5'	11/19/2021	2.5 ft. bgs	40.424682	-104.587316	0.9	6.1
AST02-N @ 2.5'	11/19/2021	2.5 ft. bgs	40.424701	-104.587325	1.0	4.8
AST02-W @ 2.5'	11/19/2021	2.5 ft. bgs	40.424694	-104.587341	0.9	3.9
AST02-E @ 2.5'	11/19/2021	2.5 ft. bgs	40.424695	-104.587307	1.0	6.0
AST03-B @ 4'	11/19/2021	4 ft. bgs	40.424680	-104.587285	1.1	4.9
AST03-N @ 2.5'	11/19/2021	2.5 ft. bgs	40.424675	-104.587288	1.1	6.8
AST03-W @ 2.5'	11/19/2021	2.5 ft. bgs	40.424665	-104.587301	1.1	5.4
AST03-S @ 2.5'	11/19/2021	2.5 ft. bgs	40.424655	-104.587294	1.0	4.8
AST03-E @ 2.5'	11/19/2021	2.5 ft. bgs	40.424657	-104.587282	1.1	5.3

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

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 23, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

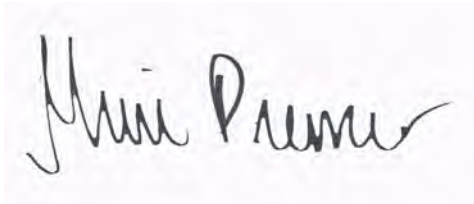
Denver, CO 80203

RE: Witwer 34, 44-6D Tank Battery

Work Order #2111304

Enclosed are the results of analyses for samples received by Summit Scientific on 11/17/21 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premier For Paul Shrewsbury
President



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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG01@0-6"	2111304-01	Soil	11/17/21 13:30	11/17/21 17:00
BKG01@2.5'	2111304-02	Soil	11/17/21 13:35	11/17/21 17:00
BKG01@4'	2111304-03	Soil	11/17/21 13:40	11/17/21 17:00
SEP01-FL@4'	2111304-04	Soil	11/17/21 14:24	11/17/21 17:00
SEP01-DL@4'	2111304-05	Soil	11/17/21 14:10	11/17/21 17:00
PWV01-B@4'	2111304-06	Soil	11/17/21 14:52	11/17/21 17:00
PWV01-W@2.5'	2111304-08	Soil	11/17/21 14:56	11/17/21 17:00

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

2111304

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@PDCt.com
City/State/Zip: Broomfield CO 80020
Phone: 303-487-1228
Project Name: WITWER 34, 44-6D Tank Battery
Project Number:
Sampler Name: Mataya Wright / David V.

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GBEEN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	VOC - 915	PAH - 915	Metals - 915		
1	BKG01 @ 0-6"	11/17/21	1330				X			X										pH, EC, SAR by saturated paste	
2	BKG01 @ 2.5'		1335				X			X											
3	BKG01 @ 4'		1340				X			X											
4	SEP01-FL @ 4'		1424				X			X			X	X							
5	SEP01-DL @ 4'		1410				X			X			X	X							
6	PWV01-B @ 4'		1452				X			X			X	X	X						
7	PWV01-N @ 2.5'		1454				X			X											
8	PWV01-W @ 2.5'		1456				X			X			X	X	X						
9	PWV01-S @ 2.5'		1458				X			X											
10	PWV01-E @ 2.5'		1500				X			X											

Relinquished by: <i>David V.</i>	Date/Time: 11-17-21 1700	Received by: Tasman's Lock Box	Date/Time:	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: <i>[Signature]</i>	Date/Time: 11-17-21 1700	Sample Integrity: 7.1	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: _____ Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

2111304

Sample Receipt Checklist

S2 Work Order# _____

Client: RDC Hasman Client Project ID: WITWER 34,44-60 Tank BatteryShipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)

7.1

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.

Custodian Printed Name or Initials

Date/Time

11-17-21



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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

BKG01@0-6"
2111304-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/17/21 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.45	0.215	mg/kg dry	1	BEL0111	12/06/21	12/09/21	EPA 6020B	
Barium	104	0.430	"	"	"	"	"	"	
Cadmium	ND	0.215	"	"	"	"	"	"	
Copper	8.09	0.430	"	"	"	"	"	"	
Lead	6.59	0.215	"	"	"	"	"	"	
Nickel	5.85	0.430	"	"	"	"	"	"	
Selenium	0.836	0.280	"	"	"	"	"	"	
Silver	0.0412	0.0215	"	"	"	"	"	"	
Zinc	31.0	0.430	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/17/21 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEK0437	11/19/21	11/19/21	EPA 7196A	

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

Date Sampled: **11/17/21 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	59.3	0.0538	mg/L dry	1	BEL0409	12/17/21	12/23/21	EPA 6020B	
Magnesium	29.5	0.0538	"	"	"	"	"	"	
Sodium	77.5	0.0538	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/17/21 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	2.05	0.00100	units	1	BEL0544	12/23/21	12/23/21	Calculation	

Summit Scientific

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

Project: Witwer 34, 44-6D Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

BKG01@0-6"
2111304-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.9		%	1	BEK0530	11/24/21	11/24/21	Calculation	

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

Date Sampled: **11/17/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.77		pH Units	1	BEL0432	12/20/21	12/20/21	EPA 9045D	I-04

Summit Scientific

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

Project: Witwer 34, 44-6D Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

BKG01@2.5'
2111304-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/17/21 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.36	0.219	mg/kg dry	1	BEL0111	12/06/21	12/09/21	EPA 6020B	
Barium	151	0.438	"	"	"	"	"	"	
Cadmium	ND	0.219	"	"	"	"	"	"	
Copper	6.19	0.438	"	"	"	"	"	"	
Lead	6.49	0.219	"	"	"	"	"	"	
Nickel	6.03	0.438	"	"	"	"	"	"	
Selenium	0.873	0.285	"	"	"	"	"	"	
Silver	0.0344	0.0219	"	"	"	"	"	"	
Zinc	26.0	0.438	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/17/21 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEK0437	11/19/21	11/19/21	EPA 7196A	

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

Date Sampled: **11/17/21 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	126	0.0547	mg/L dry	1	BEL0409	12/17/21	12/23/21	EPA 6020B	
Magnesium	74.7	0.0547	"	"	"	"	"	"	
Sodium	208	0.0547	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/17/21 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	3.63	0.00100	units	1	BEL0544	12/23/21	12/23/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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



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

Project: Witwer 34, 44-6D Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

BKG01@2.5'
2111304-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.4		%	1	BEK0530	11/24/21	11/24/21	Calculation	

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

Date Sampled: **11/17/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.50		pH Units	1	BEL0432	12/20/21	12/20/21	EPA 9045D	I-04

Summit Scientific

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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

BKG01@4'
2111304-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/17/21 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.89	0.211	mg/kg dry	1	BEL0111	12/06/21	12/09/21	EPA 6020B	
Barium	97.6	0.422	"	"	"	"	"	"	
Cadmium	ND	0.211	"	"	"	"	"	"	
Copper	3.61	0.422	"	"	"	"	"	"	
Lead	4.70	0.211	"	"	"	"	"	"	
Nickel	4.21	0.422	"	"	"	"	"	"	
Selenium	0.648	0.274	"	"	"	"	"	"	
Silver	ND	0.0211	"	"	"	"	"	"	
Zinc	16.7	0.422	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/17/21 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEK0437	11/19/21	11/19/21	EPA 7196A	

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

Date Sampled: **11/17/21 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	253	0.0528	mg/L dry	1	BEL0409	12/17/21	12/23/21	EPA 6020B	
Magnesium	172	0.0528	"	"	"	"	"	"	
Sodium	425	0.0528	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/17/21 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	5.05	0.00100	units	1	BEL0544	12/23/21	12/23/21	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: Witwer 34, 44-6D Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

BKG01@4'
2111304-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.7		%	1	BEK0530	11/24/21	11/24/21	Calculation	

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

Date Sampled: **11/17/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.63		pH Units	1	BEL0432	12/20/21	12/20/21	EPA 9045D	I-04

Summit Scientific

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

Project: Witwer 34, 44-6D Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

SEP01-FL@4'
2111304-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/21 14:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0490	11/22/21	11/23/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/17/21 14:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/21 14:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0489	11/22/21	11/23/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/21 14:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		93.2 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

SEP01-DL@4'
2111304-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/21 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0490	11/22/21	11/23/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/17/21 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		124 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		114 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/21 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0489	11/22/21	11/23/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/21 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		73.5 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

PWV01-B@4'
2111304-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/21 14:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0490	11/22/21	11/23/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/17/21 14:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		125 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		115 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/21 14:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0489	11/22/21	11/23/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/21 14:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		76.4 %	30-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Summit Scientific

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



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

Project: Witwer 34, 44-6D Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

PWV01-B@4'
2111304-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/17/21 14:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.465	0.0100	mg/L	1	BEK0494	11/22/21	12/06/21	EPA 6020B	

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

Date Sampled: **11/17/21 14:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	34.8	0.0551	mg/L dry	1	BEK0509	11/23/21	12/06/21	EPA 6020B	
Magnesium	12.2	0.0551	"	"	"	"	"	"	
Sodium	37.5	0.0551	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/17/21 14:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.39	0.00100	units	1	BEL0091	12/06/21	12/06/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/21 14:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.7		%	1	BEK0530	11/24/21	11/24/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/17/21 14:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.484	0.0100	mmhos/cm	1	BEK0533	11/24/21	11/24/21	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: Witwer 34, 44-6D Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

PWV01-B@4'
2111304-06 (Soil)

Summit Scientific

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

Date Sampled: **11/17/21 14:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.14			pH Units	1	BEK0534	11/24/21	11/24/21	EPA 9045D	

Summit Scientific

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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

PWV01-W@2.5'
2111304-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/21 14:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0490	11/22/21	11/24/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/17/21 14:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/21 14:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0489	11/22/21	11/23/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/21 14:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		61.7 %	30-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Summit Scientific

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



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

Project: Witwer 34, 44-6D Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

PWV01-W@2.5'
2111304-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/17/21 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.284	0.0100	mg/L	1	BEK0494	11/22/21	12/06/21	EPA 6020B	

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

Date Sampled: **11/17/21 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	20.2	0.0545	mg/L dry	1	BEK0509	11/23/21	12/06/21	EPA 6020B	
Magnesium	6.55	0.0545	"	"	"	"	"	"	
Sodium	2.54	0.0545	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/17/21 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.126	0.00100	units	1	BEL0091	12/06/21	12/06/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/21 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	BEK0530	11/24/21	11/24/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/17/21 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.187	0.0100	mmhos/cm	1	BEK0533	11/24/21	11/24/21	EPA 120.1	

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

Summit Scientific

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



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

Project: Witwer 34, 44-6D Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

PWV01-W@2.5'
2111304-08 (Soil)

Summit Scientific

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

Date Sampled: **11/17/21 14:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.13			pH Units	1	BEK0534	11/24/21	11/24/21	EPA 9045D	

Summit Scientific

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



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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEK0490 - EPA 5030 Soil MS

Blank (BEK0490-BLK1)

Prepared: 11/22/21 Analyzed: 11/23/21

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	0.0489		"	0.0400		122	23-173			
Surrogate: Toluene-d8	0.0467		"	0.0400		117	20-170			
Surrogate: 4-Bromofluorobenzene	0.0455		"	0.0400		114	21-167			

LCS (BEK0490-BS1)

Prepared: 11/22/21 Analyzed: 11/23/21

Benzene	0.0872	0.0020	mg/kg	0.100		87.2	70-130			
Toluene	0.107	0.0050	"	0.100		107	70-130			
Ethylbenzene	0.0883	0.0050	"	0.100		88.3	70-130			
m,p-Xylene	0.179	0.010	"	0.200		89.6	70-130			
o-Xylene	0.0887	0.0050	"	0.100		88.7	70-130			
1,2,4-Trimethylbenzene	0.0911	0.0050	"	0.100		91.1	70-130			
1,3,5-Trimethylbenzene	0.0892	0.0050	"	0.100		89.2	70-130			
Naphthalene	0.0773	0.0038	"	0.100		77.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0411		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0449		"	0.0400		112	20-170			
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400		105	21-167			

Matrix Spike (BEK0490-MS1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/23/21

Benzene	0.0850	0.0020	mg/kg	0.100	ND	85.0	70-130			
Toluene	0.104	0.0050	"	0.100	ND	104	70-130			
Ethylbenzene	0.0899	0.0050	"	0.100	ND	89.9	70-130			
m,p-Xylene	0.185	0.010	"	0.200	ND	92.7	70-130			
o-Xylene	0.0904	0.0050	"	0.100	ND	90.4	70-130			
1,2,4-Trimethylbenzene	0.0945	0.0050	"	0.100	ND	94.5	70-130			
1,3,5-Trimethylbenzene	0.0921	0.0050	"	0.100	ND	92.1	70-130			
Naphthalene	0.0839	0.0038	"	0.100	ND	83.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400		95.2	23-173			
Surrogate: Toluene-d8	0.0441		"	0.0400		110	20-170			
Surrogate: 4-Bromofluorobenzene	0.0422		"	0.0400		105	21-167			

Summit Scientific

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



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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

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

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

Batch BEK0490 - EPA 5030 Soil MS

Matrix Spike Dup (BEK0490-MSD1)	Source: 2111302-01			Prepared: 11/22/21 Analyzed: 11/23/21						
Benzene	0.0793	0.0020	mg/kg	0.100	ND	79.3	70-130	7.01	30	
Toluene	0.0988	0.0050	"	0.100	ND	98.8	70-130	4.77	30	
Ethylbenzene	0.0803	0.0050	"	0.100	ND	80.3	70-130	11.2	30	
m,p-Xylene	0.162	0.010	"	0.200	ND	80.8	70-130	13.7	30	
o-Xylene	0.0812	0.0050	"	0.100	ND	81.2	70-130	10.7	30	
1,2,4-Trimethylbenzene	0.0835	0.0050	"	0.100	ND	83.5	70-130	12.4	30	
1,3,5-Trimethylbenzene	0.0818	0.0050	"	0.100	ND	81.8	70-130	11.8	30	
Naphthalene	0.0821	0.0038	"	0.100	ND	82.1	70-130	2.17	30	
Surrogate: 1,2-Dichloroethane-d4	0.0424		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0449		"	0.0400		112	20-170			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167			

Summit Scientific

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



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

Project: Witwer 34, 44-6D Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEK0489 - EPA 3550A

Blank (BEK0489-BLK1)

Prepared: 11/22/21 Analyzed: 11/23/21

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

LCS (BEK0489-BS1)

Prepared: 11/22/21 Analyzed: 11/23/21

C10-C28 (DRO)	466	50	mg/kg	500	93.3	70-130
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Matrix Spike (BEK0489-MS1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/23/21

C10-C28 (DRO)	485	50	mg/kg	500	47.0	87.6	70-130
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Matrix Spike Dup (BEK0489-MSD1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/23/21

C10-C28 (DRO)	480	50	mg/kg	500	47.0	86.6	70-130	1.04	20
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Summit Scientific

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



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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

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

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

Batch BEK0494 - EPA 3050B

Blank (BEK0494-BLK1)

Prepared: 11/22/21 Analyzed: 12/05/21

Boron ND 0.0100 mg/L

LCS (BEK0494-BS1)

Prepared: 11/22/21 Analyzed: 12/05/21

Boron 4.82 0.0100 mg/L 5.00 96.5 80-120

Duplicate (BEK0494-DUP1)

Source: 2111301-01

Prepared: 11/22/21 Analyzed: 12/05/21

Boron 0.0856 0.0100 mg/L 0.0989 14.4 20

Matrix Spike (BEK0494-MS1)

Source: 2111301-01

Prepared: 11/22/21 Analyzed: 12/05/21

Boron 4.72 0.0100 mg/L 5.00 0.0989 92.5 75-125

Matrix Spike Dup (BEK0494-MSD1)

Source: 2111301-01

Prepared: 11/22/21 Analyzed: 12/05/21

Boron 4.91 0.0100 mg/L 5.00 0.0989 96.3 75-125 3.97 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: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BEL0111 - EPA 3050B

Blank (BEL0111-BLK1)

Prepared: 12/06/21 Analyzed: 12/09/21

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 (BEL0111-BS1)

Prepared: 12/06/21 Analyzed: 12/09/21

Arsenic	43.4	0.200	mg/kg wet	40.0	108	80-120
Barium	42.5	0.400	"	40.0	106	80-120
Cadmium	2.02	0.200	"	2.00	101	80-120
Copper	40.8	0.400	"	40.0	102	80-120
Lead	20.4	0.200	"	20.0	102	80-120
Nickel	39.3	0.400	"	40.0	98.4	80-120
Selenium	3.93	0.260	"	4.00	98.2	80-120
Silver	1.98	0.0200	"	2.00	98.8	80-120
Zinc	43.4	0.400	"	40.0	109	80-120

Duplicate (BEL0111-DUP1)

Source: 2111304-01

Prepared: 12/06/21 Analyzed: 12/09/21

Arsenic	2.95	0.215	mg/kg dry	2.45	18.5	20
Barium	121	0.430	"	104	15.1	20
Cadmium	0.194	0.215	"	0.163	17.6	20
Copper	9.39	0.430	"	8.09	14.8	20
Lead	7.74	0.215	"	6.59	16.0	20
Nickel	6.75	0.430	"	5.85	14.3	20
Selenium	0.999	0.280	"	0.836	17.8	20
Silver	0.0552	0.0215	"	0.0412	29.1	20
Zinc	37.0	0.430	"	31.0	17.7	20

QR-03

Summit Scientific

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



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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEL0111 - EPA 3050B

Matrix Spike (BEL0111-MS1)		Source: 2111304-01			Prepared: 12/06/21		Analyzed: 12/09/21			
Arsenic	47.4	0.215	mg/kg dry	43.0	2.45	104	75-125			
Barium	160	0.430	"	43.0	104	131	75-125			QR-03
Cadmium	2.26	0.215	"	2.15	0.163	97.3	75-125			
Copper	50.3	0.430	"	43.0	8.09	98.0	75-125			
Lead	27.2	0.215	"	21.5	6.59	95.7	75-125			
Nickel	47.7	0.430	"	43.0	5.85	97.3	75-125			
Selenium	4.38	0.280	"	4.30	0.836	82.4	75-125			
Silver	2.02	0.0215	"	2.15	0.0412	91.9	75-125			
Zinc	82.0	0.430	"	43.0	31.0	119	75-125			

Matrix Spike Dup (BEL0111-MSD1)		Source: 2111304-01			Prepared: 12/06/21		Analyzed: 12/09/21			
Arsenic	47.5	0.215	mg/kg dry	43.0	2.45	105	75-125	0.211	25	
Barium	160	0.430	"	43.0	104	131	75-125	0.0401	25	QR-03
Cadmium	2.31	0.215	"	2.15	0.163	99.8	75-125	2.36	25	
Copper	50.1	0.430	"	43.0	8.09	97.6	75-125	0.287	25	
Lead	27.5	0.215	"	21.5	6.59	97.3	75-125	1.26	25	
Nickel	47.7	0.430	"	43.0	5.85	97.2	75-125	0.105	25	
Selenium	4.60	0.280	"	4.30	0.836	87.5	75-125	4.92	25	
Silver	2.06	0.0215	"	2.15	0.0412	93.9	75-125	2.15	25	
Zinc	80.3	0.430	"	43.0	31.0	115	75-125	2.21	25	

Summit Scientific

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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BEK0437 - 3060A Mod

Blank (BEK0437-BLK1)

Prepared & Analyzed: 11/19/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEK0437-BS1)

Prepared & Analyzed: 11/19/21

Chromium, Hexavalent 28.5 0.30 mg/kg wet 25.0 114 80-120

Duplicate (BEK0437-DUP1)

Source: 2110521-05

Prepared & Analyzed: 11/19/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BEK0437-MS1)

Source: 2110521-05

Prepared & Analyzed: 11/19/21

Chromium, Hexavalent 29.4 0.30 mg/kg dry 28.2 ND 104 75-125

Matrix Spike Dup (BEK0437-MSD1)

Source: 2110521-05

Prepared & Analyzed: 11/19/21

Chromium, Hexavalent 29.4 0.30 mg/kg dry 28.2 ND 104 75-125 0.00 20

Summit Scientific

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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

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

Summit Scientific

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

Batch BEK0509 - General Preparation

Blank (BEK0509-BLK1)

Prepared: 11/23/21 Analyzed: 12/06/21

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

LCS (BEK0509-BS1)

Prepared: 11/23/21 Analyzed: 12/06/21

Calcium	5.64	0.0500	mg/L wet	5.00	113	70-130
Magnesium	5.72	0.0500	"	5.00	114	70-130
Sodium	5.68	0.0500	"	5.00	114	70-130

Batch BEL0409 - General Preparation

Blank (BEL0409-BLK1)

Prepared: 12/17/21 Analyzed: 12/23/21

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

LCS (BEL0409-BS1)

Prepared: 12/17/21 Analyzed: 12/23/21

Calcium	4.12	0.0500	mg/L wet	5.00	82.4	70-130
Magnesium	4.92	0.0500	"	5.00	98.3	70-130
Sodium	5.45	0.0500	"	5.00	109	70-130

Summit Scientific

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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

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

Summit Scientific

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

Batch BEK0530 - General Preparation

Duplicate (BEK0530-DUP1)		Source: 2111302-01			Prepared & Analyzed: 11/24/21					
% Solids	85.6		%		84.9		0.861		20	

Summit Scientific

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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

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

Summit Scientific

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

Batch BEK0533 - General Preparation

Blank (BEK0533-BLK1)

Prepared & Analyzed: 11/24/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEK0533-BS1)

Prepared & Analyzed: 11/24/21

Specific Conductance (EC) 0.144 0.0100 mmhos/cm 0.150 96.2 95-105

Duplicate (BEK0533-DUP1)

Source: 2111302-01

Prepared & Analyzed: 11/24/21

Specific Conductance (EC) 0.200 0.0100 mmhos/cm 0.198 0.904 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: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

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

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

Batch BEK0534 - General Preparation

LCS (BEK0534-BS1)

Prepared & Analyzed: 11/24/21

pH	9.14	pH Units	9.18	99.6	95-105
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Duplicate (BEK0534-DUP1)

Source: 2111302-01

Prepared & Analyzed: 11/24/21

pH	9.10	pH Units	8.94	1.77	20
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Batch BEL0432 - General Preparation

LCS (BEL0432-BS1)

Prepared & Analyzed: 12/20/21

pH	9.09	pH Units	9.18	99.0	95-105
----	------	----------	------	------	--------

Duplicate (BEL0432-DUP1)

Source: 2111303-04

Prepared & Analyzed: 12/20/21

pH	7.74	pH Units	7.76	0.258	20
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Summit Scientific

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



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

Project: Witwer 34, 44-6D Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/23/21 14:06

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 27, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

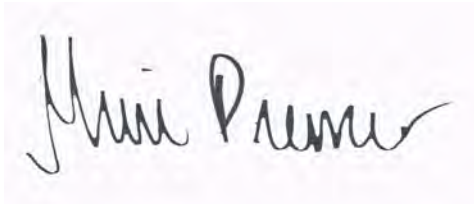
Denver, CO 80203

RE: Witwer 34, 44-6D, 43-6 Tank Battery

Work Order #2111353

Enclosed are the results of analyses for samples received by Summit Scientific on 11/19/21 13:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premier For Paul Shrewsbury

President



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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST03-B@4'	2111353-01	Soil	11/19/21 09:10	11/19/21 13:00
AST03-N@2.5'	2111353-02	Soil	11/19/21 09:12	11/19/21 13:00
AST03-W@2.5'	2111353-03	Soil	11/19/21 09:14	11/19/21 13:00
AST03-S@2.5'	2111353-04	Soil	11/19/21 09:16	11/19/21 13:00
AST03-E@2.5'	2111353-05	Soil	11/19/21 09:18	11/19/21 13:00
AST02-B@4'	2111353-06	Soil	11/19/21 09:40	11/19/21 13:00
AST02-N@2.5'	2111353-07	Soil	11/19/21 09:42	11/19/21 13:00
AST02-W@2.5'	2111353-08	Soil	11/19/21 09:44	11/19/21 13:00
AST02-S@2.5'	2111353-09	Soil	11/19/21 09:46	11/19/21 13:00
AST02-E@2.5'	2111353-10	Soil	11/19/21 09:48	11/19/21 13:00
AST01-B	2111353-11	Soil	11/19/21 10:00	11/19/21 13:00
AST01-N	2111353-12	Soil	11/19/21 10:12	11/19/21 13:00
AST01-W	2111353-13	Soil	11/19/21 10:14	11/19/21 13:00
AST01-S	2111353-14	Soil	11/19/21 10:16	11/19/21 13:00
AST01-E	2111353-15	Soil	11/19/21 10:18	11/19/21 13:00

Summit Scientific

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

2111353.1

Summit Scientific

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

Page 1 of 2

Client: PDC - Tasman Project Manager: Mark Longhurst
 Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCt.com
 City/State/Zip: Broomfield, CO 80020
 Phone: 303-487-1228
 Project Name: Witwer 34, 44-6D, 43-6 Tank Battery
 Project Number:
 Sampler Name: David V. Mataya W.

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GBEEN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HMS	VOC - 915	PAH - 915	Metals - 915	TMB ₅ (124)(135)			
1	AST03-B @ 4'	11/19/21	0910	3			X		X					X	X	X	X		X	X	X		pH, EC, SAR by saturated paste
2	AST03-N @ 2.5'		0912	3			X		X					X	X	X	X		X	X	X		
3	AST03-W @ 2.5'		0914	3			X		X														X
4	AST03-S @ 2.5'		0916	3			X		X														X
5	AST03-E @ 2.5'		0918	3			X		X														X
6	AST02-B @ 4'		0940	3			X		X					X	X	X	X		X	X	X		X
7	AST02-N @ 2.5'		0942	3			X		X														X
8	AST02-W @ 2.5'		0944	3			X		X														X
9	AST02-S @ 2.5'		0946	3			X		X					X	X	X	X		X	X	X		X
10	AST02-E @ 2.5'		0948	3			X		X														X

Relinquished by: <u>David V. Mataya</u>	Date/Time: <u>11/19/21 1300</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: _____	Turn Around Time (Check)	Notes:
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Same Day <u>X</u> 72 hours	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	24 hours _____ Standard	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	48 hours _____	
				Sample Integrity: _____	
				Temperature Upon Receipt: <u>29</u>	
				Samples Intact: <u>Yes</u> No	

2111353.2

Summit Scientific

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

Page 2 of 2

Client: PDC Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCt.com
City/State/Zip: Broomfield CO 80020 Project Name: Witwer 34,44-00, 43-6 Tank Battery
Phone: 303-487-1228 Project Number:
Sampler Name: David v/ Mataya W

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	GB1ENN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HMS	VOC - 915	PAH - 915	Metals - 915	TaB ₃ (1,2,4) (1,3,5)		
1	AST 01 - B	11/19/21	1010	3			X			X				X	X	X	X		X	X	X	pH, EC, SAR by saturated paste <u>HOLD</u>
2	AST 01 - N		1012	3			X			X				X	X	X		X	X	X		
3	AST 01 - W		1014	3			X			X											X	
4	AST 01 - S		1016	3			X			X											X	
5	AST 01 - E		1018	3			X			X												
6																						
7																						
8																						
9																						
10																						

Relinquished by: <u>David v/ Mataya W</u>	Date/Time: <u>11/19/21 1300</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: _____	Turn Around Time (Check) Same Day <u>X</u> 72 hours 24 hours _____ Standard 48 hours _____	Notes:
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time: _____	Received by: <u>[Signature]</u>	Date/Time: <u>11/19/21 1300</u>	Sample Integrity: <u>2.9</u>	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Temperature Upon Receipt: _____ Samples Intact: <u>Yes</u> No	

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2111353Client: Doc/TasmanClient Project ID: Wittwer 34,446D,43-6 Tank BatteryShipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other

Airbill #: _____

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

(Describe)

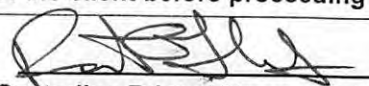
Temp (°C)

2.9

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>2.9</u>
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

 Custodian Printed Name or Initials

11.19.21
 Date/Time



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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST03-B@4'
2111353-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/19/21 09:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0463	11/19/21	11/21/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/19/21 09:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		115 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/19/21 09:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0464	11/19/21	11/21/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/19/21 09:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		97.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST03-B@4'
2111353-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/19/21 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0468	11/22/21	11/25/21	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: **11/19/21 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		72.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		94.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/19/21 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0524	0.0100	mg/L	1	BEK0493	11/22/21	12/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/19/21 09:10**

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

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST03-B@4'
2111353-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.43	0.243	mg/kg dry	1	BEK0562	11/29/21	11/29/21	EPA 6020B
Barium	117	0.485	"	"	"	"	"	"
Cadmium	ND	0.243	"	"	"	"	"	"
Copper	4.98	0.485	"	"	"	"	"	"
Lead	5.12	0.243	"	"	"	"	"	"
Nickel	5.57	0.485	"	"	"	"	"	"
Selenium	1.20	0.316	"	"	"	"	"	"
Silver	0.0247	0.0243	"	"	"	"	"	"
Zinc	21.5	0.485	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/19/21 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEL0066	12/03/21	12/03/21	EPA 7196A	

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

Date Sampled: **11/19/21 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	33.1	0.0607	mg/L dry	1	BEK0488	11/22/21	12/02/21	EPA 6020B	
Magnesium	12.5	0.0607	"	"	"	"	"	"	
Sodium	9.10	0.0607	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/19/21 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.342	0.00100	units	1	BEL0052	12/03/21	12/03/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 09:10**

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

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST03-B@4'
2111353-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.4	%	1	BEK0510	11/23/21	11/24/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/19/21 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.324	0.0100	mmhos/cm	1	BEK0507	11/23/21	11/23/21	EPA 120.1	

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

Date Sampled: **11/19/21 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.93		pH Units	1	BEK0508	11/23/21	11/23/21	EPA 9045D	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST03-N@2.5'
2111353-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/19/21 09:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0463	11/19/21	11/21/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/19/21 09:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		117 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/19/21 09:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0464	11/19/21	11/21/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/19/21 09:12**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST03-N@2.5'
2111353-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/19/21 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0468	11/22/21	11/25/21	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: **11/19/21 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		60.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		88.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/19/21 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100	mg/L	1	BEK0493	11/22/21	12/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/19/21 09:12**

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

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



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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST03-N@2.5'
2111353-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.38	0.230	mg/kg dry	1	BEK0562	11/29/21	11/29/21	EPA 6020B
Barium	70.6	0.459	"	"	"	"	"	"
Cadmium	ND	0.230	"	"	"	"	"	"
Copper	6.86	0.459	"	"	"	"	"	"
Lead	3.70	0.230	"	"	"	"	"	"
Nickel	5.05	0.459	"	"	"	"	"	"
Selenium	0.991	0.299	"	"	"	"	"	"
Silver	ND	0.0230	"	"	"	"	"	"
Zinc	20.5	0.459	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/19/21 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEL0066	12/03/21	12/03/21	EPA 7196A	

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

Date Sampled: **11/19/21 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	21.1	0.0574	mg/L dry	1	BEK0488	11/22/21	12/02/21	EPA 6020B	
Magnesium	4.48	0.0574	"	"	"	"	"	"	
Sodium	2.50	0.0574	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/19/21 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.129	0.00100	units	1	BEL0052	12/03/21	12/03/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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



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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST03-N@2.5'
2111353-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.1		%	1	BEK0510	11/23/21	11/24/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/19/21 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.176	0.0100	mmhos/cm	1	BEK0507	11/23/21	11/23/21	EPA 120.1	

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

Date Sampled: **11/19/21 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.99		pH Units	1	BEK0508	11/23/21	11/23/21	EPA 9045D	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST03-W@2.5'
2111353-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/19/21 09:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.67	0.200	mg/kg dry	1	BEL0337	12/15/21	12/24/21	EPA 6020B	
Barium	84.2	0.400	"	"	"	"	"	"	
Selenium	0.902	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 09:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	90.4		%	1	BEL0225	12/10/21	12/10/21	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: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST03-S@2.5'
2111353-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/19/21 09:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.32	0.200	mg/kg dry	1	BEL0337	12/15/21	12/24/21	EPA 6020B	
Barium	85.0	0.400	"	"	"	"	"	"	
Selenium	0.805	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 09:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	89.2		%	1	BEL0225	12/10/21	12/10/21	Calculation	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST03-E@2.5'
2111353-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/19/21 09:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.23	0.200	mg/kg dry	1	BEL0337	12/15/21	12/24/21	EPA 6020B	
Barium	84.7	0.400	"	"	"	"	"	"	
Selenium	0.787	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 09:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	89.5		%	1	BEL0225	12/10/21	12/10/21	Calculation	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST02-B@4'
2111353-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/19/21 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0463	11/19/21	11/21/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/19/21 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		117 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/19/21 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0464	11/19/21	11/21/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/19/21 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		99.2 %	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: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST02-B@4'
2111353-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/19/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0468	11/22/21	11/25/21	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: **11/19/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		88.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/19/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0219	0.0100	mg/L	1	BEK0493	11/22/21	12/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/19/21 09:40**

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

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



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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST02-B@4'
2111353-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.73	0.218	mg/kg dry	1	BEK0562	11/29/21	11/29/21	EPA 6020B
Barium	79.1	0.436	"	"	"	"	"	"
Cadmium	ND	0.218	"	"	"	"	"	"
Copper	3.63	0.436	"	"	"	"	"	"
Lead	3.78	0.218	"	"	"	"	"	"
Nickel	3.73	0.436	"	"	"	"	"	"
Selenium	0.899	0.283	"	"	"	"	"	"
Silver	ND	0.0218	"	"	"	"	"	"
Zinc	14.4	0.436	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 11/19/21 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEL0066	12/03/21	12/03/21	EPA 7196A	

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

Date Sampled: 11/19/21 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.0	0.0544	mg/L dry	1	BEK0488	11/22/21	12/02/21	EPA 6020B	
Magnesium	7.89	0.0544	"	"	"	"	"	"	
Sodium	6.24	0.0544	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 11/19/21 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.286	0.00100	units	1	BEL0052	12/03/21	12/03/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST02-B@4'
2111353-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.8		%	1	BEK0510	11/23/21	11/24/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/19/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.257	0.0100	mmhos/cm	1	BEK0507	11/23/21	11/23/21	EPA 120.1	

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

Date Sampled: **11/19/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.11		pH Units	1	BEK0508	11/23/21	11/23/21	EPA 9045D	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST02-N@2.5'
2111353-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/19/21 09:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.97	0.200	mg/kg dry	1	BEL0337	12/15/21	12/24/21	EPA 6020B	
Barium	85.8	0.400	"	"	"	"	"	"	
Selenium	0.819	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 09:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	92.1		%	1	BEL0225	12/10/21	12/10/21	Calculation	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST02-W@2.5'
2111353-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/19/21 09:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.96	0.200	mg/kg dry	1	BEL0337	12/15/21	12/24/21	EPA 6020B	
Barium	94.6	0.400	"	"	"	"	"	"	
Selenium	0.947	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 09:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	90.0		%	1	BEL0225	12/10/21	12/10/21	Calculation	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST02-S@2.5'
2111353-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/19/21 09:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0463	11/19/21	11/21/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/19/21 09:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		125 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		115 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/19/21 09:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0464	11/19/21	11/21/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/19/21 09:46**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST02-S@2.5'
2111353-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/19/21 09:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0468	11/22/21	11/25/21	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: **11/19/21 09:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		94.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/19/21 09:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.104	0.0100	mg/L	1	BEK0493	11/22/21	12/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/19/21 09:46**

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

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



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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST02-S@2.5'
2111353-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.32	0.225	mg/kg dry	1	BEK0562	11/29/21	11/30/21	EPA 6020B
Barium	83.5	0.450	"	"	"	"	"	"
Cadmium	ND	0.225	"	"	"	"	"	"
Copper	6.06	0.450	"	"	"	"	"	"
Lead	8.06	0.225	"	"	"	"	"	"
Nickel	4.93	0.450	"	"	"	"	"	"
Selenium	1.04	0.293	"	"	"	"	"	"
Silver	ND	0.0225	"	"	"	"	"	"
Zinc	21.1	0.450	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/19/21 09:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEL0066	12/03/21	12/03/21	EPA 7196A	

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

Date Sampled: **11/19/21 09:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	49.0	0.0563	mg/L dry	1	BEK0488	11/22/21	12/02/21	EPA 6020B	
Magnesium	16.3	0.0563	"	"	"	"	"	"	
Sodium	20.7	0.0563	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/19/21 09:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.654	0.00100	units	1	BEL0052	12/03/21	12/03/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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



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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST02-S@2.5'
2111353-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 09:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	88.8			%	1	BEK0510	11/23/21	11/24/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/19/21 09:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.552	0.0100		mmhos/cm	1	BEK0507	11/23/21	11/23/21	EPA 120.1	

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

Date Sampled: **11/19/21 09:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.08			pH Units	1	BEK0508	11/23/21	11/23/21	EPA 9045D	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST02-E@2.5'
2111353-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/19/21 09:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.59	0.200	mg/kg dry	1	BEL0337	12/15/21	12/24/21	EPA 6020B	
Barium	64.2	0.400	"	"	"	"	"	"	
Selenium	0.810	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 09:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.2		%	1	BEL0225	12/10/21	12/10/21	Calculation	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST01-B
2111353-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0463	11/19/21	11/21/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		121 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		116 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0464	11/19/21	11/21/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/19/21 10:00**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST01-B
2111353-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0468	11/22/21	11/25/21	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: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		78.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		104 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0308	0.0100	mg/L	1	BEK0493	11/22/21	12/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/19/21 10:00**

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

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST01-B
2111353-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.08	0.225	mg/kg dry	1	BEK0562	11/29/21	11/30/21	EPA 6020B
Barium	104	0.451	"	"	"	"	"	"
Cadmium	ND	0.225	"	"	"	"	"	"
Copper	4.88	0.451	"	"	"	"	"	"
Lead	4.90	0.225	"	"	"	"	"	"
Nickel	4.66	0.451	"	"	"	"	"	"
Selenium	0.977	0.293	"	"	"	"	"	"
Silver	ND	0.0225	"	"	"	"	"	"
Zinc	18.1	0.451	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEL0066	12/03/21	12/03/21	EPA 7196A	

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

Date Sampled: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	19.2	0.0563	mg/L dry	1	BEK0488	11/22/21	12/02/21	EPA 6020B	
Magnesium	5.29	0.0563	"	"	"	"	"	"	
Sodium	2.27	0.0563	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.118	0.00100	units	1	BEL0052	12/03/21	12/03/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST01-B
2111353-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.8		%	1	BEK0510	11/23/21	11/24/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.174	0.0100	mmhos/cm	1	BEK0507	11/23/21	11/23/21	EPA 120.1	

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

Date Sampled: **11/19/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BEK0508	11/23/21	11/23/21	EPA 9045D	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST01-N
2111353-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/19/21 10:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0463	11/19/21	11/21/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/19/21 10:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		118 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/19/21 10:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0464	11/19/21	11/21/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/19/21 10:12**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST01-N
2111353-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/19/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0468	11/22/21	11/25/21	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: **11/19/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		85.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/19/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.115	0.0100	mg/L	1	BEK0493	11/22/21	12/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/19/21 10:12**

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: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST01-N
2111353-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.88	0.228	mg/kg dry	1	BEK0562	11/29/21	11/30/21	EPA 6020B
Barium	104	0.455	"	"	"	"	"	"
Cadmium	ND	0.228	"	"	"	"	"	"
Copper	4.90	0.455	"	"	"	"	"	"
Lead	4.76	0.228	"	"	"	"	"	"
Nickel	4.78	0.455	"	"	"	"	"	"
Selenium	1.07	0.296	"	"	"	"	"	"
Silver	0.0237	0.0228	"	"	"	"	"	"
Zinc	18.4	0.455	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/19/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEL0066	12/03/21	12/03/21	EPA 7196A	

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

Date Sampled: **11/19/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	54.9	0.0569	mg/L dry	1	BEK0488	11/22/21	12/02/21	EPA 6020B	
Magnesium	20.2	0.0569	"	"	"	"	"	"	
Sodium	60.7	0.0569	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/19/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.78	0.00100	units	1	BEL0052	12/03/21	12/03/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 10:12**

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: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST01-N
2111353-12 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	87.9	%	1	BEK0510	11/23/21	11/24/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/19/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.768	0.0100	mmhos/cm	1	BEK0507	11/23/21	11/23/21	EPA 120.1	

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

Date Sampled: **11/19/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.99		pH Units	1	BEK0508	11/23/21	11/23/21	EPA 9045D	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST01-W
2111353-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/19/21 10:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.18	0.200	mg/kg dry	1	BEL0337	12/15/21	12/24/21	EPA 6020B	
Barium	106	0.400	"	"	"	"	"	"	
Selenium	0.891	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 10:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	88.7		%	1	BEL0225	12/10/21	12/10/21	Calculation	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST01-S
2111353-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/19/21 10:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.86	0.200	mg/kg dry	1	BEL0337	12/15/21	12/24/21	EPA 6020B	
Barium	97.3	0.400	"	"	"	"	"	"	
Selenium	0.997	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 10:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	85.9		%	1	BEL0225	12/10/21	12/10/21	Calculation	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

AST01-E
2111353-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/19/21 10:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.54	0.200	mg/kg dry	1	BEL0337	12/15/21	12/24/21	EPA 6020B	
Barium	96.6	0.400	"	"	"	"	"	"	
Selenium	0.815	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/19/21 10:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	89.0		%	1	BEL0225	12/10/21	12/10/21	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: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEK0463 - EPA 5030 Soil MS

Blank (BEK0463-BLK1)

Prepared: 11/19/21 Analyzed: 11/20/21

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	0.0556		"	0.0400		139	23-173			
Surrogate: Toluene-d8	0.0486		"	0.0400		122	20-170			
Surrogate: 4-Bromofluorobenzene	0.0442		"	0.0400		110	21-167			

LCS (BEK0463-BS1)

Prepared: 11/19/21 Analyzed: 11/21/21

Benzene	0.0537	0.0020	mg/kg	0.0750		71.6	70-130			
Toluene	0.0708	0.0050	"	0.0750		94.4	70-130			
Ethylbenzene	0.0568	0.0050	"	0.0750		75.8	70-130			
m,p-Xylene	0.111	0.010	"	0.150		74.3	70-130			
o-Xylene	0.0564	0.0050	"	0.0750		75.2	70-130			
1,2,4-Trimethylbenzene	0.0585	0.0050	"	0.0750		78.0	70-130			
1,3,5-Trimethylbenzene	0.0581	0.0050	"	0.0750		77.4	70-130			
Naphthalene	0.0713	0.0038	"	0.0750		95.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0470		"	0.0400		117	20-170			
Surrogate: 4-Bromofluorobenzene	0.0423		"	0.0400		106	21-167			

Matrix Spike (BEK0463-MS1)

Source: 2111353-01

Prepared: 11/19/21 Analyzed: 11/21/21

Benzene	0.0811	0.0020	mg/kg	0.0750	ND	108	70-130			
Toluene	0.0676	0.0050	"	0.0750	ND	90.2	70-130			
Ethylbenzene	0.0543	0.0050	"	0.0750	ND	72.4	70-130			
m,p-Xylene	0.110	0.010	"	0.150	ND	73.3	70-130			
o-Xylene	0.0558	0.0050	"	0.0750	ND	74.4	70-130			
1,2,4-Trimethylbenzene	0.0594	0.0050	"	0.0750	ND	79.2	70-130			
1,3,5-Trimethylbenzene	0.0583	0.0050	"	0.0750	ND	77.8	70-130			
Naphthalene	0.0751	0.0038	"	0.0750	ND	100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0464		"	0.0400		116	20-170			
Surrogate: 4-Bromofluorobenzene	0.0434		"	0.0400		108	21-167			

Summit Scientific

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



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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

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

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

Batch BEK0463 - EPA 5030 Soil MS

Matrix Spike Dup (BEK0463-MSD1)	Source: 2111353-01			Prepared: 11/19/21 Analyzed: 11/21/21						
Benzene	0.0837	0.0020	mg/kg	0.0750	ND	112	70-130	3.17	30	
Toluene	0.0674	0.0050	"	0.0750	ND	89.9	70-130	0.355	30	
Ethylbenzene	0.0574	0.0050	"	0.0750	ND	76.6	70-130	5.69	30	
m,p-Xylene	0.132	0.010	"	0.150	ND	87.8	70-130	18.0	30	
o-Xylene	0.0584	0.0050	"	0.0750	ND	77.9	70-130	4.62	30	
1,2,4-Trimethylbenzene	0.0553	0.0050	"	0.0750	ND	73.7	70-130	7.27	30	
1,3,5-Trimethylbenzene	0.0538	0.0050	"	0.0750	ND	71.7	70-130	8.14	30	
Naphthalene	0.0784	0.0038	"	0.0750	ND	104	70-130	4.30	30	
Surrogate: 1,2-Dichloroethane-d4	0.0436		"	0.0400		109	23-173			
Surrogate: Toluene-d8	0.0464		"	0.0400		116	20-170			
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107	21-167			

Summit Scientific

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



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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEK0464 - EPA 3550A

Blank (BEK0464-BLK1)

Prepared: 11/19/21 Analyzed: 11/20/21

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

LCS (BEK0464-BS1)

Prepared: 11/19/21 Analyzed: 11/20/21

C10-C28 (DRO)	507	50	mg/kg	500	101	70-130
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Matrix Spike (BEK0464-MS1)

Source: 2111353-01

Prepared: 11/19/21 Analyzed: 11/20/21

C10-C28 (DRO)	466	50	mg/kg	500	15.5	90.1	70-130
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Matrix Spike Dup (BEK0464-MSD1)

Source: 2111353-01

Prepared: 11/19/21 Analyzed: 11/21/21

C10-C28 (DRO)	470	50	mg/kg	500	15.5	90.9	70-130	0.864	20
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Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEK0468 - EPA 5030 Soil MS

Blank (BEK0468-BLK1)

Prepared: 11/22/21 Analyzed: 11/23/21

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	0.0321		"	0.0333		96.3		40-150			
Surrogate: Fluoranthene-d10	0.0279		"	0.0333		83.6		40-150			

LCS (BEK0468-BS1)

Prepared: 11/22/21 Analyzed: 11/23/21

Acenaphthene	0.0297	0.00500	mg/kg	0.0333		89.1		31-137			
Anthracene	0.0290	0.00500	"	0.0333		87.1		30-120			
Benzo (a) anthracene	0.0256	0.00500	"	0.0333		76.9		30-120			
Benzo (a) pyrene	0.0265	0.00500	"	0.0333		79.5		30-120			
Benzo (b) fluoranthene	0.0231	0.00500	"	0.0333		69.2		30-120			
Benzo (k) fluoranthene	0.0263	0.00500	"	0.0333		78.8		30-120			
Chrysene	0.0277	0.00500	"	0.0333		83.2		30-120			
Dibenz (a,h) anthracene	0.0322	0.00500	"	0.0333		96.5		30-120			
Fluoranthene	0.0288	0.00500	"	0.0333		86.3		30-120			
Fluorene	0.0316	0.00500	"	0.0333		94.9		30-120			
Indeno (1,2,3-cd) pyrene	0.0318	0.00500	"	0.0333		95.4		30-120			
Pyrene	0.0232	0.00500	"	0.0333		69.5		35-142			
1-Methylnaphthalene	0.0289	0.00500	"	0.0333		86.7		35-142			
2-Methylnaphthalene	0.0273	0.00500	"	0.0333		81.8		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0308		"	0.0333		92.3		40-150			
Surrogate: Fluoranthene-d10	0.0318		"	0.0333		95.4		40-150			

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEK0468 - EPA 5030 Soil MS

Matrix Spike (BEK0468-MS1)

Source: 2111292-01

Prepared: 11/22/21 Analyzed: 11/23/21

Acenaphthene	0.0250	0.00500	mg/kg	0.0333	ND	75.0	31-137		
Anthracene	0.0238	0.00500	"	0.0333	ND	71.5	30-120		
Benzo (a) anthracene	0.0231	0.00500	"	0.0333	ND	69.3	30-120		
Benzo (a) pyrene	0.0230	0.00500	"	0.0333	ND	69.1	30-120		
Benzo (b) fluoranthene	0.0197	0.00500	"	0.0333	ND	59.2	30-120		
Benzo (k) fluoranthene	0.0214	0.00500	"	0.0333	ND	64.1	30-120		
Chrysene	0.0238	0.00500	"	0.0333	ND	71.5	30-120		
Dibenz (a,h) anthracene	0.0283	0.00500	"	0.0333	ND	85.0	30-120		
Fluoranthene	0.0253	0.00500	"	0.0333	ND	76.0	30-120		
Fluorene	0.0271	0.00500	"	0.0333	ND	81.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0400	0.00500	"	0.0333	ND	120	30-120		
Pyrene	0.0207	0.00500	"	0.0333	ND	62.0	35-142		
1-Methylnaphthalene	0.0242	0.00500	"	0.0333	ND	72.7	15-130		
2-Methylnaphthalene	0.0258	0.00500	"	0.0333	ND	77.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0278		"	0.0333		83.4	40-150		
Surrogate: Fluoranthene-d10	0.0283		"	0.0333		85.0	40-150		

Matrix Spike Dup (BEK0468-MSD1)

Source: 2111292-01

Prepared: 11/22/21 Analyzed: 11/23/21

Acenaphthene	0.0232	0.00500	mg/kg	0.0333	ND	69.6	31-137	7.51	30
Anthracene	0.0243	0.00500	"	0.0333	ND	73.0	30-120	2.06	30
Benzo (a) anthracene	0.0227	0.00500	"	0.0333	ND	68.2	30-120	1.61	30
Benzo (a) pyrene	0.0227	0.00500	"	0.0333	ND	68.1	30-120	1.41	30
Benzo (b) fluoranthene	0.0195	0.00500	"	0.0333	ND	58.4	30-120	1.48	30
Benzo (k) fluoranthene	0.0210	0.00500	"	0.0333	ND	63.0	30-120	1.71	30
Chrysene	0.0233	0.00500	"	0.0333	ND	69.9	30-120	2.32	30
Dibenz (a,h) anthracene	0.0285	0.00500	"	0.0333	ND	85.4	30-120	0.520	30
Fluoranthene	0.0252	0.00500	"	0.0333	ND	75.7	30-120	0.404	30
Fluorene	0.0263	0.00500	"	0.0333	ND	78.9	30-120	2.84	30
Indeno (1,2,3-cd) pyrene	0.0400	0.00500	"	0.0333	ND	120	30-120	0.207	30
Pyrene	0.0204	0.00500	"	0.0333	ND	61.1	35-142	1.42	30
1-Methylnaphthalene	0.0254	0.00500	"	0.0333	ND	76.3	15-130	4.81	50
2-Methylnaphthalene	0.0250	0.00500	"	0.0333	ND	74.9	15-130	3.20	50
Surrogate: 2-Methylnaphthalene-d10	0.0279		"	0.0333		83.8	40-150		
Surrogate: Fluoranthene-d10	0.0284		"	0.0333		85.2	40-150		

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

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

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

Batch BEK0493 - EPA 3050B

Blank (BEK0493-BLK1)

Prepared: 11/22/21 Analyzed: 12/01/21

Boron ND 0.0100 mg/L

LCS (BEK0493-BS1)

Prepared: 11/22/21 Analyzed: 12/01/21

Boron 5.18 0.0100 mg/L 5.00 104 80-120

Duplicate (BEK0493-DUP1)

Source: 2111261-01

Prepared: 11/22/21 Analyzed: 12/01/21

Boron 0.148 0.0100 mg/L 0.155 4.65 20

Matrix Spike (BEK0493-MS1)

Source: 2111261-01

Prepared: 11/22/21 Analyzed: 12/01/21

Boron 5.30 0.0100 mg/L 5.00 0.155 103 75-125

Matrix Spike Dup (BEK0493-MSD1)

Source: 2111261-01

Prepared: 11/22/21 Analyzed: 12/01/21

Boron 5.38 0.0100 mg/L 5.00 0.155 104 75-125 1.40 25

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEK0562 - EPA 3050B

Blank (BEK0562-BLK1)

Prepared & Analyzed: 11/29/21

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 (BEK0562-BS1)

Prepared & Analyzed: 11/29/21

Arsenic	47.6	0.200	mg/kg wet	40.0	119	80-120
Barium	43.3	0.400	"	40.0	108	80-120
Cadmium	2.10	0.200	"	2.00	105	80-120
Copper	44.9	0.400	"	40.0	112	80-120
Lead	19.2	0.200	"	20.0	96.2	80-120
Nickel	43.3	0.400	"	40.0	108	80-120
Selenium	4.51	0.260	"	4.00	113	80-120
Silver	2.05	0.0200	"	2.00	102	80-120
Zinc	45.4	0.400	"	40.0	114	80-120

Duplicate (BEK0562-DUP1)

Source: 2110144-01

Prepared & Analyzed: 11/29/21

Arsenic	4.33	0.245	mg/kg dry	3.59	18.6	20	
Barium	92.1	0.490	"	37.7	83.9	20	QR-03
Cadmium	0.296	0.245	"	0.193	42.3	20	QR-03
Copper	20.6	0.490	"	20.0	3.00	20	
Lead	14.6	0.245	"	11.4	24.9	20	QR-03
Nickel	12.4	0.490	"	12.9	3.64	20	
Selenium	1.94	0.318	"	1.86	4.61	20	
Silver	0.0502	0.0245	"	0.0439	13.4	20	
Zinc	60.7	0.490	"	59.4	2.26	20	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BEK0562 - EPA 3050B

Matrix Spike (BEK0562-MS1)			Source: 2110144-01		Prepared & Analyzed: 11/29/21					
Arsenic	64.0	0.245	mg/kg dry	49.0	3.59	123	75-125			
Barium	146	0.490	"	49.0	37.7	221	75-125			QR-03
Cadmium	2.62	0.245	"	2.45	0.193	98.9	75-125			
Copper	71.6	0.490	"	49.0	20.0	105	75-125			
Lead	26.3	0.245	"	24.5	11.4	60.9	75-125			QR-03
Nickel	69.1	0.490	"	49.0	12.9	115	75-125			
Selenium	6.05	0.318	"	4.90	1.86	85.7	75-125			
Silver	2.32	0.0245	"	2.45	0.0439	93.0	75-125			
Zinc	112	0.490	"	49.0	59.4	108	75-125			

Matrix Spike Dup (BEK0562-MSD1)			Source: 2110144-01		Prepared & Analyzed: 11/29/21					
Arsenic	61.2	0.245	mg/kg dry	49.0	3.59	118	75-125	4.35	25	
Barium	80.2	0.490	"	49.0	37.7	86.8	75-125	58.0	25	QR-03
Cadmium	2.52	0.245	"	2.45	0.193	95.1	75-125	3.62	25	
Copper	70.6	0.490	"	49.0	20.0	103	75-125	1.38	25	
Lead	27.9	0.245	"	24.5	11.4	67.6	75-125	6.06	25	QR-03
Nickel	66.1	0.490	"	49.0	12.9	109	75-125	4.43	25	
Selenium	5.96	0.318	"	4.90	1.86	83.8	75-125	1.53	25	
Silver	2.27	0.0245	"	2.45	0.0439	90.8	75-125	2.33	25	
Zinc	112	0.490	"	49.0	59.4	107	75-125	0.348	25	

Batch BEL0337 - EPA 3050B

Blank (BEL0337-BLK1)			Prepared: 12/15/21 Analyzed: 12/24/21							
Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Selenium	ND	0.260	"							

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEL0337 - EPA 3050B

LCS (BEL0337-BS1)

Prepared: 12/15/21 Analyzed: 12/24/21

Arsenic	40.7	0.200	mg/kg wet	40.0		102	80-120
Barium	38.8	0.400	"	40.0		97.0	80-120
Selenium	4.12	0.260	"	4.00		103	80-120

Duplicate (BEL0337-DUP1)

Source: 2111303-04

Prepared: 12/15/21 Analyzed: 12/24/21

Arsenic	2.55	0.200	mg/kg dry		2.07		20.8	20	QR-03
Barium	120	0.400	"		113		5.98	20	
Selenium	0.861	0.260	"		0.935		8.28	20	

Matrix Spike (BEL0337-MS1)

Source: 2111303-04

Prepared: 12/15/21 Analyzed: 12/24/21

Arsenic	44.8	0.200	mg/kg dry	43.0	2.07	99.4	75-125
Barium	161	0.400	"	43.0	113	112	75-125
Selenium	4.58	0.260	"	4.30	0.935	84.9	75-125

Matrix Spike Dup (BEL0337-MSD1)

Source: 2111303-04

Prepared: 12/15/21 Analyzed: 12/24/21

Arsenic	46.7	0.200	mg/kg dry	43.0	2.07	104	75-125	4.16	25
Barium	155	0.400	"	43.0	113	99.6	75-125	3.24	25
Selenium	4.67	0.260	"	4.30	0.935	86.9	75-125	1.86	25

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BEL0066 - 3060A Mod

Blank (BEL0066-BLK1)

Prepared & Analyzed: 12/03/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEL0066-BS1)

Prepared & Analyzed: 12/03/21

Chromium, Hexavalent 24.3 0.30 mg/kg wet 25.0 97.2 80-120

Duplicate (BEL0066-DUP1)

Source: 2111353-01

Prepared & Analyzed: 12/03/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BEL0066-MS1)

Source: 2111353-01

Prepared & Analyzed: 12/03/21

Chromium, Hexavalent 30.9 0.30 mg/kg dry 30.3 ND 102 75-125

Matrix Spike Dup (BEL0066-MSD1)

Source: 2111353-01

Prepared & Analyzed: 12/03/21

Chromium, Hexavalent 31.1 0.30 mg/kg dry 30.3 ND 103 75-125 0.783 20

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

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

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

Batch BEK0488 - General Preparation

Blank (BEK0488-BLK1)

Prepared: 11/22/21 Analyzed: 12/02/21

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

LCS (BEK0488-BS1)

Prepared: 11/22/21 Analyzed: 12/02/21

Calcium	5.91	0.0500	mg/L wet	5.00	118	70-130
Magnesium	5.64	0.0500	"	5.00	113	70-130
Sodium	5.50	0.0500	"	5.00	110	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: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

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

Summit Scientific

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

Batch BEK0510 - General Preparation

Duplicate (BEK0510-DUP1)		Source: 2111325-01		Prepared: 11/23/21 Analyzed: 11/24/21						
% Solids	93.3		%		93.0			0.411	20	

Batch BEL0225 - General Preparation

Duplicate (BEL0225-DUP1)		Source: 2111262-03		Prepared & Analyzed: 12/10/21						
% Solids	94.4		%		95.1			0.749	20	

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

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

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

Batch BEK0507 - General Preparation

Blank (BEK0507-BLK1)

Prepared & Analyzed: 11/23/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEK0507-BS1)

Prepared & Analyzed: 11/23/21

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

Duplicate (BEK0507-DUP1)

Source: 2111262-07

Prepared & Analyzed: 11/23/21

Specific Conductance (EC) 1.16 0.0100 mmhos/cm 1.18 1.54 20

Summit Scientific

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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

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

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

Batch BEK0508 - General Preparation

LCS (BEK0508-BS1)

Prepared & Analyzed: 11/23/21

pH	9.11	pH Units	9.18	99.2	95-105
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Duplicate (BEK0508-DUP1)

Source: 2111262-07

Prepared & Analyzed: 11/23/21

pH	8.08	pH Units	8.05	0.372	20
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Summit Scientific

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



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

Project: Witwer 34, 44-6D, 43-6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 16:33

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference