

**TABLE 1
FORMER CHURCHILL 2-6B WELLHEAD
SOIL ANALYTICAL RESULTS SUMMARY TABLE**

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
WH02 @ 6'	10/19/2021	6 ft. bgs.	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
FLR02 @ 4'	10/19/2021	4 ft. bgs.	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
FL02-02 @ 3'	10/20/2021	3 ft. bgs.	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
FL02-03 @ 3'	10/20/2021	3 ft. bgs.	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
FL02-05 @ 3'	10/20/2021	3 ft. bgs.	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
FL02-10 @ 3'	10/20/2021	3 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 CHURCHILL 2-6B WELLHEAD
SOIL ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitability for Reclamation Standard ⁽¹⁾			6-8.3	<4	<6	2
WH02 @ 6'	10/19/2021	6 ft. bgs.	7.73	0.897	1.71	0.0446
FLR02 @ 4'	10/19/2021	4 ft. bgs.	7.69	0.314	0.132	0.0480

Notes:

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

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

ft. = Feet

bgs = Below ground surface

TABLE 3
FORMER CHURCHILL 2-6B WELLHEAD
SOIL ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS - PAHs

Sample ID	Date Sampled	Depth	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ^(1,2)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^(1,2,3)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
WH02 @ 6'	10/19/2021	6 ft. bgs.	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500
FLR02 @ 4'	10/19/2021	4 ft. bgs.	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500	<.00500

Notes:

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

COGCC = Colorado Oil and Gas Conservation Commission
 (<) = Analytical result is less than the indicated laboratory reporting limit.

PAHs = Polycyclic aromatic hydrocarbons

Benzo(a) = Benzoanthracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

M = Methylnaphthalene

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

TABLE 4
FORMER CHURCHILL 2-6B WELLHEAD
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
			Latitude	Longitude		
WH02 @ 6'	10/19/2021	6 ft. bgs.	40.37578903	-104.5571651	1.1	0.1
WHS02-N @ 0-6"	10/19/2021	0-6 in. bgs	NC	NC	NC	0.0
WHS02-S @ 0-6"	10/19/2021	0-6 in. bgs	NC	NC	NC	0.7
WHS02-E @ 0-6"	10/19/2021	0-6 in. bgs	NC	NC	NC	0.1
WHS02-W @ 0-6"	10/19/2021	0-6 in. bgs	NC	NC	NC	0.5
FLR02 @ 4'	10/19/2021	4 ft. bgs.	40.37576773	-104.5571457	1.3	0.2
GW03	10/19/2021	6 ft. bgs.	40.37575281	-104.5571574	1	NC
GW02	10/20/2021	6 ft. bgs.	40.37642204	-104.5587875	1	NC
FL02-01 @ 3'	10/20/2021	3 ft. bgs.	NC	NC	NC	1.6
FL02-02 @ 3'	10/20/2021	3 ft. bgs.	40.37601252	-104.5583762	0.9	0.4
FL02-03 @ 3'	10/20/2021	3 ft. bgs.	40.37613978	-104.5588382	1	0.8
FL02-04 @ 3'	10/20/2021	3 ft. bgs.	NC	NC	NC	0.5
FL02-05 @ 3'	10/20/2021	3 ft. bgs.	40.37575281	-104.5571574	1	0.5
FL02-06 @ 3'	10/20/2021	3 ft. bgs.	NC	NC	NC	0.2
FL02-07 @ 3'	10/20/2021	3 ft. bgs.	NC	NC	NC	0.1
FL02-08 @ 3'	10/20/2021	3 ft. bgs.	NC	NC	NC	0.8
FL02-09 @ 3'	10/20/2021	3 ft. bgs.	NC	NC	NC	0.2
FL02-10 @ 3'	10/28/2021	3 ft. bgs.	40.37720151	-104.5628943	1.1	0.6

Notes:

1. Global Positioning System (GPS) data is provided in decimal degrees using World Geodetic System (WGS) 84 UTM Zone 13
2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

in. = Inches

bgs = Below ground surface

NC = Data not collected

**TABLE 5
FORMER CHURCHILL 2-6B WELLHEAD
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)
COGCC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-
GW02	10/20/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA
GW03	10/19/2021	<1.0	<1.0	2.3	31	<1.0	12	6.2	NA

Notes:

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November
3. SSLs are applicable if a pathway for communication with groundwater is present.
4. Value calculated by adding TVPH-GRO, TEPH-DRO, and TEPH-ORO concentrations.

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

AMSL = Above Mean Sea Level

BOLD = Analytical result is in exceedance of applicable standard.

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 27, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Churchill 2-6B Wellhead

Work Order #2110316

Enclosed are the results of analyses for samples received by Summit Scientific on 10/19/21 16:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Paul Shrewsbury

President



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

Project: Churchill 2-6B Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH02@6'	2110316-01	Soil	10/19/21 14:08	10/19/21 16:40
FLR-02@4'	2110316-02	Soil	10/19/21 14:15	10/19/21 16:40
GW03	2110316-03	Water	10/19/21 14:07	10/19/21 16:40

Summit Scientific

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

Summit Scientific

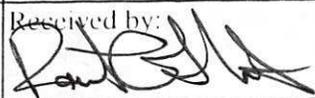
4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

2110316.1

Page 1 of 2

Client: PDC / Tasman Project Manager: Mark Longhurst
 Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCI.com
 City/State/Zip: Broomfield/ CO/ 80020
 Phone: 303-487-1228 Project Name: Cheechill 2-6B wellhead
 Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAH Series			
1	WHO2 @ 6'	10/19/21	1408	3			X			X				X	X	X	X	X	X	pH, EC, SAR by saturated paste	
2	WHO FLR02 @ 4'	↓	1415	3			X			X				X	X	X	X	X			
3																					
4																					
5																					
6																					
7																					
8																					
9	..																				
10																					

Relinquished by:  Date/Time: 1642 10/19/21	Received by: Tasman's Lock Box Date/Time: 1643 10/19/21	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___	Notes:
Relinquished by: Tasman's Lock Box Date/Time:	Received by:  Date/Time: 1642 10-19-21	Sample Integrity: Temperature Upon Receipt: 12.8	
Relinquished by: Date/Time:	Received by: Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Summit Scientific

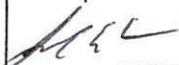
4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

21103K6-2

Page 2 of 2

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCI.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Churchill 2-6B wellhead
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions				
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR						
1	6W03	10/19/21	1407	3	X				X					X	X	X							pH, EC, SAR by saturated paste
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9	"																						
10																							

Relinquished by: 	Date/Time: 1642 10/19/21	Received by: Tasman's Lock Box	Date/Time: 1642 10/19/21	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 1640 10/19/21	Sample Integrity: Temperature Upon Receipt: 12.8	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

2/2

2110316

Sample Receipt Checklist

S2 Work Order# _____

Client: RBC/Tasman Client Project ID: Churchill 2-60B wellhead

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

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

Temp (°C) 12.8

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>ON ICE</u>
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Sunday</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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>HCl</u>
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

[Signature]
Custodian Printed Name of Initials

10.19.21
Date/Time



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

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

WH02@6'
2110316-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEJ0363	10/19/21	10/19/21	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: **10/19/21 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		98.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		91.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEJ0364	10/19/21	10/19/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/19/21 14:08**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

WH02@6'
2110316-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/19/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0370	10/20/21	10/22/21	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: **10/19/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		78.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		83.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/19/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0446	0.0100	mg/L	1	BEJ0447	10/22/21	10/24/21	EPA 6020B	

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

Date Sampled: **10/19/21 14:08**

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: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

WH02@6'
2110316-01 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	75.6	0.0592	mg/L dry	1	BEJ0366	10/19/21	10/24/21	EPA 6020B	
Magnesium	15.1	0.0592	"	"	"	"	"	"	
Sodium	62.3	0.0592	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/19/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.71	0.00100	units	1	BEJ0475	10/24/21	10/24/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/19/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.5		%	1	BEJ0385	10/20/21	10/21/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/19/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.897	0.0100	mmhos/cm	1	BEJ0386	10/20/21	10/20/21	EPA 120.1	

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

Date Sampled: **10/19/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.73		pH Units	1	BEJ0387	10/20/21	10/20/21	EPA 9045D	

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

FLR-02@4'
2110316-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEJ0363	10/19/21	10/19/21	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: **10/19/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0364	10/19/21	10/19/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/19/21 14:15**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

FLR-02@4'
2110316-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/19/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0370	10/20/21	10/22/21	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: **10/19/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		73.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		82.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/19/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0485	0.0100	mg/L	1	BEJ0447	10/22/21	10/24/21	EPA 6020B	

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

Date Sampled: **10/19/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

FLR-02@4'
2110316-02 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.8	0.0580	mg/L dry	1	BEJ0366	10/19/21	10/24/21	EPA 6020B	
Magnesium	4.78	0.0580	"	"	"	"	"	"	
Sodium	3.01	0.0580	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/19/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.132	0.00100	units	1	BEJ0475	10/24/21	10/24/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/19/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.2		%	1	BEJ0385	10/20/21	10/21/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/19/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.314	0.0100	mmhos/cm	1	BEJ0386	10/20/21	10/20/21	EPA 120.1	

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

Date Sampled: **10/19/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.69		pH Units	1	BEJ0387	10/20/21	10/20/21	EPA 9045D	

Summit Scientific

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

GW03
2110316-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 14:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BEJ0368	10/19/21	10/19/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	2.3	1.0	"	"	"	"	"	"	
Xylenes (total)	31	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	12	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	6.2	1.0	"	"	"	"	"	"	

Date Sampled: **10/19/21 14:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		143 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 14:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	5.0	mg/L	1	BEJ0369	10/19/21	10/20/21	EPA 8015M	
C28-C36 (ORO)	ND	5.0	"	"	"	"	"	"	

Date Sampled: **10/19/21 14:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		145 %	58.9-148		"	"	"	"	

Summit Scientific

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEJ0363 - EPA 5030 Soil MS

Blank (BEJ0363-BLK1)

Prepared: 10/19/21 Analyzed: 10/20/21

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	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0436</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>		<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>		<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0428</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>		<i>21-167</i>			

LCS (BEJ0363-BS1)

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	0.144	0.0020	mg/kg	0.150		96.2		70-130			
Toluene	0.127	0.0050	"	0.150		84.7		70-130			
Ethylbenzene	0.129	0.0050	"	0.150		86.2		70-130			
m,p-Xylene	0.259	0.010	"	0.300		86.3		70-130			
o-Xylene	0.134	0.0050	"	0.150		89.5		70-130			
1,2,4-Trimethylbenzene	0.122	0.0050	"	0.150		81.1		70-130			
1,3,5-Trimethylbenzene	0.120	0.0050	"	0.150		79.8		70-130			
Naphthalene	0.164	0.0038	"	0.150		109		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0464</i>		<i>"</i>	<i>0.0400</i>		<i>116</i>		<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>		<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0418</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>		<i>21-167</i>			

Matrix Spike (BEJ0363-MS1)

Source: 2110318-06

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	0.122	0.0020	mg/kg	0.150	ND	81.1		70-130			
Toluene	0.109	0.0050	"	0.150	ND	72.9		70-130			
Ethylbenzene	0.106	0.0050	"	0.150	ND	70.6		70-130			
m,p-Xylene	0.213	0.010	"	0.300	ND	71.0		70-130			
o-Xylene	0.109	0.0050	"	0.150	ND	72.6		70-130			
1,2,4-Trimethylbenzene	0.131	0.0050	"	0.150	ND	87.5		70-130			
1,3,5-Trimethylbenzene	0.131	0.0050	"	0.150	ND	87.4		70-130			
Naphthalene	0.132	0.0038	"	0.150	ND	88.1		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0474</i>		<i>"</i>	<i>0.0400</i>		<i>118</i>		<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>		<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0417</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>		<i>21-167</i>			

Summit Scientific

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEJ0363 - EPA 5030 Soil MS

Matrix Spike Dup (BEJ0363-MSD1)

Source: 2110318-06

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	0.123	0.0020	mg/kg	0.150	ND	81.9	70-130	1.03	30	
Toluene	0.111	0.0050	"	0.150	ND	73.7	70-130	1.12	30	
Ethylbenzene	0.107	0.0050	"	0.150	ND	71.6	70-130	1.43	30	
m,p-Xylene	0.214	0.010	"	0.300	ND	71.3	70-130	0.366	30	
o-Xylene	0.110	0.0050	"	0.150	ND	73.5	70-130	1.23	30	
1,2,4-Trimethylbenzene	0.129	0.0050	"	0.150	ND	86.3	70-130	1.36	30	
1,3,5-Trimethylbenzene	0.129	0.0050	"	0.150	ND	85.8	70-130	1.87	30	
Naphthalene	0.133	0.0038	"	0.150	ND	88.7	70-130	0.656	30	
Surrogate: 1,2-Dichloroethane-d4	0.0500		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

Batch BEJ0368 - EPA 5030 Water MS

Blank (BEJ0368-BLK1)

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.3		113	23-173			
Surrogate: Toluene-d8	10.8		"	13.3		81.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.4	21-167			

LCS (BEJ0368-BS1)

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	38.5	1.0	ug/l	33.3		115	51-132			
Toluene	45.8	1.0	"	33.3		137	51-138			
Ethylbenzene	43.8	1.0	"	33.3		131	58-146			
m,p-Xylene	84.0	2.0	"	66.7		126	57-144			
o-Xylene	43.2	1.0	"	33.3		130	53-146			
Naphthalene	36.8	1.0	"	33.3		111	70-130			
1,2,4-Trimethylbenzene	41.4	1.0	"	33.3		124	70-130			
1,3,5-Trimethylbenzene	40.3	1.0	"	33.3		121	70-130			
Surrogate: 1,2-Dichloroethane-d4	16.4		"	13.3		123	23-173			
Surrogate: Toluene-d8	13.7		"	13.3		103	20-170			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.4	21-167			

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

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

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

Batch BEJ0368 - EPA 5030 Water MS

Matrix Spike (BEJ0368-MS1)

Source: 2110318-08

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	49.0	1.0	ug/l	33.3	9.79	118	34-141			
Toluene	116	1.0	"	33.3	83.9	96.4	27-151			
Ethylbenzene	73.9	1.0	"	33.3	31.0	129	29-160			
m,p-Xylene	301	2.0	"	66.7	245	83.1	20-166			
o-Xylene	126	1.0	"	33.3	94.7	93.7	33-159			
Naphthalene	66.7	1.0	"	33.3	25.2	125	70-130			
1,2,4-Trimethylbenzene	125	1.0	"	33.3	92.4	99.2	70-130			
1,3,5-Trimethylbenzene	78.5	1.0	"	33.3	40.0	115	70-130			
Surrogate: 1,2-Dichloroethane-d4	16.3		"	13.3		122	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.7	20-170			
Surrogate: 4-Bromofluorobenzene	14.2		"	13.3		106	21-167			

Matrix Spike Dup (BEJ0368-MSD1)

Source: 2110318-08

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	45.0	1.0	ug/l	33.3	9.79	106	34-141	8.60	30
Toluene	121	1.0	"	33.3	83.9	112	27-151	4.52	30
Ethylbenzene	64.4	1.0	"	33.3	31.0	100	29-160	13.8	30
m,p-Xylene	265	2.0	"	66.7	245	30.0	20-166	12.5	30
o-Xylene	121	1.0	"	33.3	94.7	77.4	33-159	4.39	30
Naphthalene	65.9	1.0	"	33.3	25.2	122	70-130	1.27	30
1,2,4-Trimethylbenzene	124	1.0	"	33.3	92.4	93.7	70-130	1.46	30
1,3,5-Trimethylbenzene	66.4	1.0	"	33.3	40.0	79.2	70-130	16.7	30
Surrogate: 1,2-Dichloroethane-d4	17.2		"	13.3		129	23-173		
Surrogate: Toluene-d8	13.7		"	13.3		103	20-170		
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.3	21-167		

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEJ0364 - EPA 3550A

Blank (BEJ0364-BLK1)

Prepared: 10/19/21 Analyzed: 10/20/21

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

LCS (BEJ0364-BS1)

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	476	50	mg/kg	500	111	95.2	70-130		
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Matrix Spike (BEJ0364-MS1)

Source: 2110302-05

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	473	50	mg/kg	500	111	72.4	70-130		
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Matrix Spike Dup (BEJ0364-MSD1)

Source: 2110302-05

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	492	50	mg/kg	500	111	76.2	70-130	4.01	20
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Batch BEJ0369 - EPA 5030 Water MS

Blank (BEJ0369-BLK1)

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	ND	5.0	mg/L						
C28-C36 (ORO)	ND	5.0	"						

LCS (BEJ0369-BS1)

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	64.5	5.0	mg/L	50.0	129	54.3-147			
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LCS Dup (BEJ0369-BSD1)

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	59.2	5.0	mg/L	50.0	118	54.3-147	8.62	15	
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEJ0370 - EPA 5030 Soil MS

Blank (BEJ0370-BLK1)

Prepared: 10/20/21 Analyzed: 10/21/21

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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0228		"	0.0333		68.3	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0245		"	0.0333		73.5	40-150			

LCS (BEJ0370-BS1)

Prepared: 10/20/21 Analyzed: 10/21/21

Acenaphthene	0.0271	0.00500	mg/kg	0.0333		81.4	31-137			
Anthracene	0.0273	0.00500	"	0.0333		81.9	30-120			
Benzo (a) anthracene	0.0264	0.00500	"	0.0333		79.1	30-120			
Benzo (a) pyrene	0.0269	0.00500	"	0.0333		80.6	30-120			
Benzo (b) fluoranthene	0.0277	0.00500	"	0.0333		83.2	30-120			
Benzo (k) fluoranthene	0.0293	0.00500	"	0.0333		87.9	30-120			
Chrysene	0.0276	0.00500	"	0.0333		82.7	30-120			
Dibenz (a,h) anthracene	0.0285	0.00500	"	0.0333		85.6	30-120			
Fluoranthene	0.0281	0.00500	"	0.0333		84.4	30-120			
Fluorene	0.0274	0.00500	"	0.0333		82.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0255	0.00500	"	0.0333		76.5	30-120			
Pyrene	0.0290	0.00500	"	0.0333		87.1	35-142			
1-Methylnaphthalene	0.0281	0.00500	"	0.0333		84.2	35-142			
2-Methylnaphthalene	0.0280	0.00500	"	0.0333		84.0	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0282		"	0.0333		84.5	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0285		"	0.0333		85.6	40-150			

Summit Scientific

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



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

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEJ0370 - EPA 5030 Soil MS

Matrix Spike (BEJ0370-MS1)	Source: 2110292-01			Prepared: 10/20/21 Analyzed: 10/21/21					
Acenaphthene	0.0209	0.00500	mg/kg	0.0333	ND	62.6	31-137		
Anthracene	0.0225	0.00500	"	0.0333	ND	67.6	30-120		
Benzo (a) anthracene	0.0214	0.00500	"	0.0333	ND	64.1	30-120		
Benzo (a) pyrene	0.0190	0.00500	"	0.0333	ND	57.0	30-120		
Benzo (b) fluoranthene	0.0189	0.00500	"	0.0333	ND	56.7	30-120		
Benzo (k) fluoranthene	0.0196	0.00500	"	0.0333	ND	58.8	30-120		
Chrysene	0.0215	0.00500	"	0.0333	ND	64.6	30-120		
Dibenz (a,h) anthracene	0.0204	0.00500	"	0.0333	ND	61.2	30-120		
Fluoranthene	0.0240	0.00500	"	0.0333	ND	72.1	30-120		
Fluorene	0.0220	0.00500	"	0.0333	ND	66.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0133	0.00500	"	0.0333	ND	40.0	30-120		
Pyrene	0.0227	0.00500	"	0.0333	ND	68.0	35-142		
1-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.0	15-130		
2-Methylnaphthalene	0.0232	0.00500	"	0.0333	ND	69.6	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0232		"	0.0333		69.6	40-150		
Surrogate: Fluoranthene-d10	0.0240		"	0.0333		72.0	40-150		

Matrix Spike Dup (BEJ0370-MSD1)	Source: 2110292-01			Prepared: 10/20/21 Analyzed: 10/21/21					
Acenaphthene	0.0235	0.00500	mg/kg	0.0333	ND	70.5	31-137	11.9	30
Anthracene	0.0246	0.00500	"	0.0333	ND	73.9	30-120	8.83	30
Benzo (a) anthracene	0.0236	0.00500	"	0.0333	ND	70.7	30-120	9.71	30
Benzo (a) pyrene	0.0224	0.00500	"	0.0333	ND	67.1	30-120	16.4	30
Benzo (b) fluoranthene	0.0218	0.00500	"	0.0333	ND	65.5	30-120	14.4	30
Benzo (k) fluoranthene	0.0221	0.00500	"	0.0333	ND	66.3	30-120	12.0	30
Chrysene	0.0241	0.00500	"	0.0333	ND	72.3	30-120	11.2	30
Dibenz (a,h) anthracene	0.0208	0.00500	"	0.0333	ND	62.4	30-120	1.92	30
Fluoranthene	0.0247	0.00500	"	0.0333	ND	74.1	30-120	2.70	30
Fluorene	0.0237	0.00500	"	0.0333	ND	71.1	30-120	7.47	30
Indeno (1,2,3-cd) pyrene	0.0139	0.00500	"	0.0333	ND	41.7	30-120	4.15	30
Pyrene	0.0258	0.00500	"	0.0333	ND	77.4	35-142	12.9	30
1-Methylnaphthalene	0.0244	0.00500	"	0.0333	ND	73.1	15-130	7.19	50
2-Methylnaphthalene	0.0250	0.00500	"	0.0333	ND	75.0	15-130	7.52	50
Surrogate: 2-Methylnaphthalene-d10	0.0249		"	0.0333		74.6	40-150		
Surrogate: Fluoranthene-d10	0.0244		"	0.0333		73.1	40-150		

Summit Scientific

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/27/21 17:54

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

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

Batch BEJ0447 - EPA 3050B

Blank (BEJ0447-BLK1)

Prepared: 10/22/21 Analyzed: 10/24/21

Boron ND 0.0100 mg/L

LCS (BEJ0447-BS1)

Prepared: 10/22/21 Analyzed: 10/24/21

Boron 5.36 0.0100 mg/L 5.00 107 80-120

Matrix Spike (BEJ0447-MS1)

Source: 2110302-03

Prepared: 10/22/21 Analyzed: 10/24/21

Boron 6.00 0.0100 mg/L 5.00 0.0773 119 75-125

Matrix Spike Dup (BEJ0447-MSD1)

Source: 2110302-03

Prepared: 10/22/21 Analyzed: 10/24/21

Boron 6.00 0.0100 mg/L 5.00 0.0773 118 75-125 0.0343 25

Summit Scientific

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/27/21 17:54

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

Summit Scientific

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

Batch BEJ0366 - General Preparation

Blank (BEJ0366-BLK1)

Prepared: 10/19/21 Analyzed: 10/23/21

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

LCS (BEJ0366-BS1)

Prepared: 10/19/21 Analyzed: 10/24/21

Calcium	5.42	0.0500	mg/L wet	5.00		108	70-130			
Magnesium	5.29	0.0500	"	5.00		106	70-130			
Sodium	5.66	0.0500	"	5.00		113	70-130			

Summit Scientific

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/27/21 17:54

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

Summit Scientific

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

Batch BEJ0385 - General Preparation

Duplicate (BEJ0385-DUP1)		Source: 2110295-01		Prepared: 10/20/21 Analyzed: 10/21/21	
% Solids	78.7	%		77.5	1.49 20

Summit Scientific

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/27/21 17:54

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

Summit Scientific

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

Batch BEJ0386 - General Preparation

Blank (BEJ0386-BLK1)

Prepared & Analyzed: 10/20/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEJ0386-BS1)

Prepared & Analyzed: 10/20/21

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BEJ0386-DUP1)

Source: 2110295-01

Prepared & Analyzed: 10/20/21

Specific Conductance (EC) 1.16 0.0100 mmhos/cm 1.16 0.00 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: Churchill 2-6B Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 10/27/21 17:54

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

Summit Scientific

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

Batch BEJ0387 - General Preparation

LCS (BEJ0387-BS1)

Prepared & Analyzed: 10/20/21

pH	9.18	pH Units	9.18	100	95-105
----	------	----------	------	-----	--------

Duplicate (BEJ0387-DUP1)

Source: 2110295-01

Prepared & Analyzed: 10/20/21

pH	8.51	pH Units	8.47	0.471	20
----	------	----------	------	-------	----

Summit Scientific

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

Project: Churchill 2-6B Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/21 17:54

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 28, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

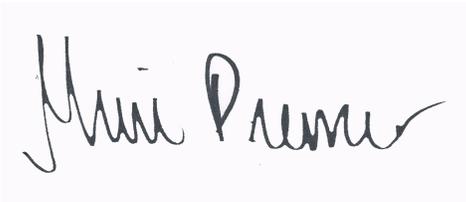
Denver, CO 80203

RE: Churchill 2-6B Flowline

Work Order #2110351

Enclosed are the results of analyses for samples received by Summit Scientific on 10/20/21 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Paul Shrewsbury
President



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

Project: Churchill 2-6B Flowline

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
10/28/21 17:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL02-02@3'	2110351-01	Soil	10/20/21 12:15	10/20/21 17:00
FL02-03@3'	2110351-02	Soil	10/20/21 12:23	10/20/21 17:00
FL02-05@3'	2110351-03	Soil	10/20/21 12:32	10/20/21 17:00
FL02-10@3'	2110351-04	Soil	10/20/21 13:33	10/20/21 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

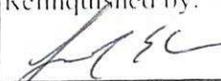
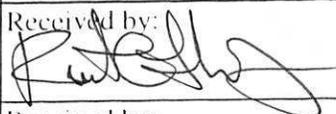
2110351

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@PDCI.com
 City/State/Zip: Broomfield/ CO/ 80020
 Phone: 303-487-1228 Project Name: Cheahill 2-6B Flowline
 Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR				
1	FL02-02 @ 3'	10/20/21	1215	4			X			X				X	X	X				pH, EC, SAR by saturated paste	
2	FL02-03 @ 3'	↓	1223	4			X			X				X	X	X					
3	FL02-05 @ 3'	↓	1232	4			X			X				X	X	X					
4	FL02-10 @ 3'	↓	1333	4			X			X				X	X	X					
5																					
6																					
7																					
8																					
9	..																				
10																					

Relinquished by: 	Date/Time: 1700 10/20/21	Received by: Tasman's Lock Box	Date/Time: 1700 10/20/21	Turn Around Time (Check): Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 10 20 21 1700	Sample Integrity: 4.7	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 4.7 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

2110351

Sample Receipt Checklist

S2 Work Order# _____

Client: Poc Tasmania Client Project ID: Churchill ZGB Flowline

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

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

Temp (°C) 4.7

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ICE</u>
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

[Signature]
Custodian Printed Name or Initials

10/20/21
Date/Time



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

Project: Churchill 2-6B Flowline

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 17:37

FL02-02@3'
2110351-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/21 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEJ0488	10/25/21	10/26/21	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: **10/20/21 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		83.0 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.8 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/20/21 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEJ0489	10/25/21	10/26/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/20/21 12:15**

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

Summit Scientific

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

Project: Churchill 2-6B Flowline

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 17:37

FL02-03@3'
2110351-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/21 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEJ0488	10/25/21	10/26/21	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: **10/20/21 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		79.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.5 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/20/21 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0489	10/25/21	10/26/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/20/21 12:23**

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

Summit Scientific

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

Project: Churchill 2-6B Flowline

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 17:37

FL02-05@3'
2110351-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/21 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEJ0488	10/25/21	10/26/21	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: **10/20/21 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		73.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/20/21 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0489	10/25/21	10/26/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/20/21 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		116 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Churchill 2-6B Flowline

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 17:37

FL02-10@3'
2110351-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/21 13:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEJ0488	10/25/21	10/26/21	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: **10/20/21 13:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		82.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.3 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/20/21 13:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0489	10/25/21	10/26/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/20/21 13:33**

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

Summit Scientific

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



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

Project: Churchill 2-6B Flowline

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 17:37

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEJ0488 - EPA 5030 Soil MS

Blank (BEJ0488-BLK1)

Prepared: 10/25/21 Analyzed: 10/26/21

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0321		"	0.0400		80.2	23-173			
<i>Surrogate: Toluene-d8</i>	0.0435		"	0.0400		109	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0364		"	0.0400		91.1	21-167			

LCS (BEJ0488-BS1)

Prepared: 10/25/21 Analyzed: 10/26/21

Benzene	0.0872	0.0020	mg/kg	0.0750		116	70-130			
Toluene	0.0748	0.0050	"	0.0750		99.7	70-130			
Ethylbenzene	0.0772	0.0050	"	0.0750		103	70-130			
m,p-Xylene	0.149	0.010	"	0.150		99.1	70-130			
o-Xylene	0.0648	0.0050	"	0.0750		86.4	70-130			
1,2,4-Trimethylbenzene	0.0633	0.0050	"	0.0750		84.4	70-130			
1,3,5-Trimethylbenzene	0.0686	0.0050	"	0.0750		91.5	70-130			
Naphthalene	0.0640	0.0038	"	0.0750		85.3	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0314		"	0.0400		78.4	23-173			
<i>Surrogate: Toluene-d8</i>	0.0448		"	0.0400		112	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0365		"	0.0400		91.3	21-167			

Matrix Spike (BEJ0488-MS1)

Source: 2110321-02

Prepared: 10/25/21 Analyzed: 10/26/21

Benzene	0.0568	0.0020	mg/kg	0.0750	ND	75.7	70-130			
Toluene	0.0753	0.0050	"	0.0750	ND	100	70-130			
Ethylbenzene	0.0745	0.0050	"	0.0750	ND	99.3	70-130			
m,p-Xylene	0.146	0.010	"	0.150	ND	97.0	70-130			
o-Xylene	0.0645	0.0050	"	0.0750	ND	86.0	70-130			
1,2,4-Trimethylbenzene	0.0641	0.0050	"	0.0750	ND	85.4	70-130			
1,3,5-Trimethylbenzene	0.0678	0.0050	"	0.0750	ND	90.4	70-130			
Naphthalene	0.0841	0.0038	"	0.0750	ND	112	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0355		"	0.0400		88.6	23-173			
<i>Surrogate: Toluene-d8</i>	0.0436		"	0.0400		109	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0373		"	0.0400		93.3	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: Churchill 2-6B Flowline

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/28/21 17:37

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

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

Batch BEJ0488 - EPA 5030 Soil MS

Matrix Spike Dup (BEJ0488-MSD1)	Source: 2110321-02			Prepared: 10/25/21 Analyzed: 10/26/21					
Benzene	0.0572	0.0020	mg/kg	0.0750	ND	76.3	70-130	0.842	30
Toluene	0.0726	0.0050	"	0.0750	ND	96.8	70-130	3.65	30
Ethylbenzene	0.0750	0.0050	"	0.0750	ND	100	70-130	0.722	30
m,p-Xylene	0.144	0.010	"	0.150	ND	96.1	70-130	0.932	30
o-Xylene	0.0639	0.0050	"	0.0750	ND	85.2	70-130	0.935	30
1,2,4-Trimethylbenzene	0.0637	0.0050	"	0.0750	ND	84.9	70-130	0.658	30
1,3,5-Trimethylbenzene	0.0678	0.0050	"	0.0750	ND	90.4	70-130	0.0885	30
Naphthalene	0.0829	0.0038	"	0.0750	ND	110	70-130	1.44	30
Surrogate: 1,2-Dichloroethane-d4	0.0326		"	0.0400		81.4	23-173		
Surrogate: Toluene-d8	0.0432		"	0.0400		108	20-170		
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.4	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: Churchill 2-6B Flowline

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/28/21 17:37

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEJ0489 - EPA 3550A

Blank (BEJ0489-BLK1)

Prepared: 10/25/21 Analyzed: 10/26/21

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

LCS (BEJ0489-BS1)

Prepared: 10/25/21 Analyzed: 10/26/21

C10-C28 (DRO)	401	50	mg/kg	500	80.1	70-130				
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Matrix Spike (BEJ0489-MS1)

Source: 2110321-02

Prepared: 10/25/21 Analyzed: 10/26/21

C10-C28 (DRO)	476	50	mg/kg	500	86.2	78.0	70-130			
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Matrix Spike Dup (BEJ0489-MSD1)

Source: 2110321-02

Prepared: 10/25/21 Analyzed: 10/26/21

C10-C28 (DRO)	488	50	mg/kg	500	86.2	80.4	70-130	2.46	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: Churchill 2-6B Flowline

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 17:37

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 28, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

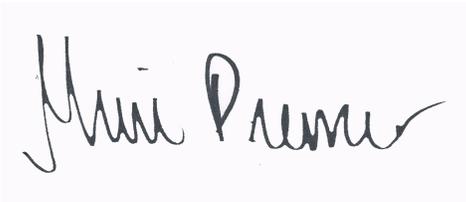
Denver, CO 80203

RE: Churchill 28-2 Wellhead

Work Order #2110318

Enclosed are the results of analyses for samples received by Summit Scientific on 10/19/21 19:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Paul Shrewsbury
President



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

Project: Churchill 28-2 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH01@6'	2110318-01	Soil	10/19/21 11:50	10/19/21 19:40
FLR01@4'	2110318-02	Soil	10/19/21 11:55	10/19/21 19:40
FL01-02@3'	2110318-03	Soil	10/19/21 12:22	10/19/21 19:40
FL01-04@3'	2110318-04	Soil	10/19/21 12:46	10/19/21 19:40
FL01-05@3'	2110318-05	Soil	10/19/21 12:46	10/19/21 19:40
FL01-07@3'	2110318-06	Soil	10/19/21 12:53	10/19/21 19:40
FL01-09@3'	2110318-07	Soil	10/19/21 13:14	10/19/21 19:40
GW01	2110318-08	Water	10/19/21 11:40	10/19/21 19:40
GW02	2110318-09	Water	10/19/21 12:39	10/19/21 19:40

Summit Scientific

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

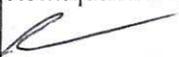
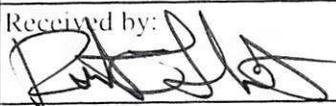
Summit Scientific

4653 Table Mountain Drive ♦ Golden, Colorado 80403 **210318.1**
303-277-9310

Page 1 of 2

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCI.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Chuschill 28-2 well head
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAH suite			
1	WHO1 @ 6'	10/19/21	1150	3			X			X				X	X	X	X	X	X		pH, EC, SAR by saturated paste
2	FLR01 @ 4'	10/19/21	1155	3			X			X				X	X	X	X	X	X		
3	FL01-02 @ 3'		1222	2			X			X				X	X	X					
4	FL01-04 @ 3'		1246	2			X			X				X	X	X					
5	FL01-05 @ 3'		1246	2			X			X				X	X	X					
6	FL01-07 @ 3'		1253	2			X			X				X	X	X					
7	FL01-09 @ 3'		1314	2			X			X				X	X	X					
8																					
9	..																				
10																					

Relinquished by: 	Date/Time: 1642 10/19/21	Received by: Tasman's Lock Box	Date/Time: 1642 10/19/21	Turn Around Time (Check)	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 101921 1642	Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: <u>10.0</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Summit Scientific

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

2110318-2

Page 2 of 2

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCI.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: Churchill 28-2 Wellhead
Sampler Name: Sam Anderson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions			
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXM - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR					
1	GW01	10/19/21	1140	3	X				X					X	X	X					pH, EC, SAR by saturated paste	
2	GW02	↓	1239	3	X				X					X	X	X						
3																						
4																						
5																						
6																						
7																						
8																						
9	..																					
10																						

Relinquished by:  Date/Time: 1642 10/19/21	Received by: Tasman's Lock Box Date/Time: 1642 10/19/21	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___	Notes:
Relinquished by: Tasman's Lock Box Date/Time:	Received by:  Date/Time: 101921 1642	Sample Integrity:	
Relinquished by: Date/Time:	Received by: Date/Time:	Temperature Upon Receipt: 10.0 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

2/2

2110318

Sample Receipt Checklist

S2 Work Order# _____

Client: PDC/Tasman

Client Project ID: Churchill 28-2 wellhead

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

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

Temp (°C) 10.0

Thermometer ID: G86A9201901378

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

Additional Comments (if any):

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

[Signature]
Custodian Printed Name or Initials

10.19.21
Date/Time



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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

WH01@6'
2110318-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEJ0363	10/19/21	10/20/21	EPA 8260B	
Toluene	0.035	0.0050		"	"	"	"	"	"	
Ethylbenzene	0.020	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.39	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.35	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.21	0.0050		"	"	"	"	"	"	
Naphthalene	0.041	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	3.3	0.50		"	"	"	"	"	"	

Date Sampled: **10/19/21 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		108 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		162 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEJ0364	10/19/21	10/20/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/19/21 11:50**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

WH01@6'
2110318-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/19/21 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0370	10/20/21	10/22/21	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	0.0954	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.130	0.00500	"	"	"	"	"	"	

Date Sampled: **10/19/21 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	68.0 %	40-150			"	"	"	"	
Surrogate: Fluoranthene-d10	67.4 %	40-150			"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/19/21 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0388	0.0100	mg/L	1	BEJ0447	10/22/21	10/24/21	EPA 6020B	

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

Date Sampled: **10/19/21 11:50**

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: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

WH01@6'
2110318-01 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	69.8	0.0574	mg/L dry	1	BEJ0366	10/19/21	10/24/21	EPA 6020B	
Magnesium	8.72	0.0574	"	"	"	"	"	"	
Sodium	64.6	0.0574	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/19/21 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.94	0.00100	units	1	BEJ0475	10/24/21	10/24/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/19/21 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.1		%	1	BEJ0385	10/20/21	10/21/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/19/21 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.886	0.0100	mmhos/cm	1	BEJ0386	10/20/21	10/20/21	EPA 120.1	

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

Date Sampled: **10/19/21 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.58		pH Units	1	BEJ0387	10/20/21	10/20/21	EPA 9045D	

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

FLR01@4'
2110318-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEJ0363	10/19/21	10/20/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.020	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.013	0.0050	"	"	"	"	"	"	
Naphthalene	0.0073	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1400	50	"	100	"	"	"	"	

Date Sampled: **10/19/21 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		92.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		253 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1800	50	mg/kg	1	BEJ0364	10/19/21	10/20/21	EPA 8015M	
C28-C36 (ORO)	280	50	"	"	"	"	"	"	

Date Sampled: **10/19/21 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		120 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

FLR01@4'
2110318-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/19/21 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0237	0.00500	mg/kg	1	BEJ0370	10/20/21	10/22/21	EPA 8270D SIM	
Anthracene	0.221	0.0500	"	10	"	"	"	"	
Benzo (a) anthracene	0.0931	0.00500	"	1	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00751	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.101	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0292	0.00500	"	"	"	"	"	"	
Fluorene	0.0527	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0377	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/19/21 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		79.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		91.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/19/21 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0343	0.0100	mg/L	1	BEJ0447	10/22/21	10/24/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/19/21 11:55**

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: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

FLR01@4'
2110318-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.847	0.231	mg/kg dry	1	BEJ0424	10/22/21	10/22/21	EPA 6020B	
Barium	71.3	0.461	"	"	"	"	"	"	
Cadmium	ND	0.231	"	"	"	"	"	"	
Copper	6.28	0.461	"	"	"	"	"	"	
Lead	8.20	0.231	"	"	"	"	"	"	
Nickel	3.49	0.461	"	"	"	"	"	"	
Selenium	0.408	0.300	"	"	"	"	"	"	
Silver	0.0240	0.0231	"	"	"	"	"	"	
Zinc	23.7	0.461	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/19/21 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEJ0438	10/22/21	10/22/21	EPA 7196A	

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

Date Sampled: 10/19/21 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	81.7	0.0576	mg/L dry	1	BEJ0366	10/19/21	10/24/21	EPA 6020B	
Magnesium	16.9	0.0576	"	"	"	"	"	"	
Sodium	45.2	0.0576	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/19/21 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.19	0.00100	units	1	BEJ0475	10/24/21	10/24/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/19/21 11:55

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: Churchill 28-2 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/28/21 12:13

FLR01@4'
2110318-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.8	%	1	BEJ0385	10/20/21	10/21/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/19/21 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.860	0.0100	mmhos/cm	1	BEJ0386	10/20/21	10/20/21	EPA 120.1	

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

Date Sampled: **10/19/21 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.73		pH Units	1	BEJ0387	10/20/21	10/20/21	EPA 9045D	

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

FL01-02@3'
2110318-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 12:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEJ0363	10/19/21	10/20/21	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: **10/19/21 12:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		105 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 12:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEJ0364	10/19/21	10/20/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/19/21 12:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		110 %		30-150		"	"	"	"	

Summit Scientific

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



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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

FL01-04@3'
2110318-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 12:46**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEJ0363	10/19/21	10/20/21	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: **10/19/21 12:46**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 12:46**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0364	10/19/21	10/20/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/19/21 12:46**

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

Summit Scientific

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



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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

FL01-05@3'
2110318-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 12:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEJ0363	10/19/21	10/20/21	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: **10/19/21 12:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		105 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 12:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEJ0364	10/19/21	10/20/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/19/21 12:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		109 %		30-150		"	"	"	"	

Summit Scientific

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



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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

FL01-07@3'
2110318-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 12:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEJ0363	10/19/21	10/20/21	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: **10/19/21 12:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 12:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEJ0364	10/19/21	10/20/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/19/21 12:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		112 %		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: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

FL01-09@3'
2110318-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEJ0363	10/19/21	10/20/21	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: **10/19/21 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.1 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0364	10/19/21	10/20/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/19/21 13:14**

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

Summit Scientific

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



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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

GW01
2110318-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	9.8	1.0	ug/l	1	BEJ0368	10/19/21	10/20/21	EPA 8260B	
Toluene	84	1.0	"	"	"	"	"	"	
Ethylbenzene	31	1.0	"	"	"	"	"	"	
Xylenes (total)	340	2.0	"	"	"	"	"	"	
Naphthalene	25	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	92	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	40	1.0	"	"	"	"	"	"	

Date Sampled: **10/19/21 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		132 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	5.0	mg/L	1	BEJ0369	10/19/21	10/20/21	EPA 8015M	
C28-C36 (ORO)	ND	5.0	"	"	"	"	"	"	

Date Sampled: **10/19/21 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		124 %	58.9-148		"	"	"	"	

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

GW02
2110318-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/21 12:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BEJ0368	10/19/21	10/20/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/19/21 12:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		135 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/21 12:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	5.0	mg/L	1	BEJ0369	10/19/21	10/20/21	EPA 8015M	
C28-C36 (ORO)	ND	5.0	"	"	"	"	"	"	

Date Sampled: **10/19/21 12:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		118 %	58.9-148		"	"	"	"	

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEJ0363 - EPA 5030 Soil MS

Blank (BEJ0363-BLK1)

Prepared: 10/19/21 Analyzed: 10/20/21

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0436		"	0.0400		109	23-173			
<i>Surrogate: Toluene-d8</i>	0.0399		"	0.0400		99.8	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0428		"	0.0400		107	21-167			

LCS (BEJ0363-BS1)

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	0.144	0.0020	mg/kg	0.150		96.2	70-130			
Toluene	0.127	0.0050	"	0.150		84.7	70-130			
Ethylbenzene	0.129	0.0050	"	0.150		86.2	70-130			
m,p-Xylene	0.259	0.010	"	0.300		86.3	70-130			
o-Xylene	0.134	0.0050	"	0.150		89.5	70-130			
1,2,4-Trimethylbenzene	0.122	0.0050	"	0.150		81.1	70-130			
1,3,5-Trimethylbenzene	0.120	0.0050	"	0.150		79.8	70-130			
Naphthalene	0.164	0.0038	"	0.150		109	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0464		"	0.0400		116	23-173			
<i>Surrogate: Toluene-d8</i>	0.0405		"	0.0400		101	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0418		"	0.0400		104	21-167			

Matrix Spike (BEJ0363-MS1)

Source: 2110318-06

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	0.122	0.0020	mg/kg	0.150	ND	81.1	70-130			
Toluene	0.109	0.0050	"	0.150	ND	72.9	70-130			
Ethylbenzene	0.106	0.0050	"	0.150	ND	70.6	70-130			
m,p-Xylene	0.213	0.010	"	0.300	ND	71.0	70-130			
o-Xylene	0.109	0.0050	"	0.150	ND	72.6	70-130			
1,2,4-Trimethylbenzene	0.131	0.0050	"	0.150	ND	87.5	70-130			
1,3,5-Trimethylbenzene	0.131	0.0050	"	0.150	ND	87.4	70-130			
Naphthalene	0.132	0.0038	"	0.150	ND	88.1	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0474		"	0.0400		118	23-173			
<i>Surrogate: Toluene-d8</i>	0.0407		"	0.0400		102	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0417		"	0.0400		104	21-167			

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEJ0363 - EPA 5030 Soil MS

Matrix Spike Dup (BEJ0363-MSD1)

Source: 2110318-06

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	0.123	0.0020	mg/kg	0.150	ND	81.9	70-130	1.03	30	
Toluene	0.111	0.0050	"	0.150	ND	73.7	70-130	1.12	30	
Ethylbenzene	0.107	0.0050	"	0.150	ND	71.6	70-130	1.43	30	
m,p-Xylene	0.214	0.010	"	0.300	ND	71.3	70-130	0.366	30	
o-Xylene	0.110	0.0050	"	0.150	ND	73.5	70-130	1.23	30	
1,2,4-Trimethylbenzene	0.129	0.0050	"	0.150	ND	86.3	70-130	1.36	30	
1,3,5-Trimethylbenzene	0.129	0.0050	"	0.150	ND	85.8	70-130	1.87	30	
Naphthalene	0.133	0.0038	"	0.150	ND	88.7	70-130	0.656	30	
Surrogate: 1,2-Dichloroethane-d4	0.0500		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

Batch BEJ0368 - EPA 5030 Water MS

Blank (BEJ0368-BLK1)

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.3		113	23-173			
Surrogate: Toluene-d8	10.8		"	13.3		81.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.4	21-167			

LCS (BEJ0368-BS1)

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	38.5	1.0	ug/l	33.3		115	51-132			
Toluene	45.8	1.0	"	33.3		137	51-138			
Ethylbenzene	43.8	1.0	"	33.3		131	58-146			
m,p-Xylene	84.0	2.0	"	66.7		126	57-144			
o-Xylene	43.2	1.0	"	33.3		130	53-146			
Naphthalene	36.8	1.0	"	33.3		111	70-130			
1,2,4-Trimethylbenzene	41.4	1.0	"	33.3		124	70-130			
1,3,5-Trimethylbenzene	40.3	1.0	"	33.3		121	70-130			
Surrogate: 1,2-Dichloroethane-d4	16.4		"	13.3		123	23-173			
Surrogate: Toluene-d8	13.7		"	13.3		103	20-170			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.4	21-167			

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

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

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

Batch BEJ0368 - EPA 5030 Water MS

Matrix Spike (BEJ0368-MS1)

Source: 2110318-08

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	49.0	1.0	ug/l	33.3	9.79	118	34-141			
Toluene	116	1.0	"	33.3	83.9	96.4	27-151			
Ethylbenzene	73.9	1.0	"	33.3	31.0	129	29-160			
m,p-Xylene	301	2.0	"	66.7	245	83.1	20-166			
o-Xylene	126	1.0	"	33.3	94.7	93.7	33-159			
Naphthalene	66.7	1.0	"	33.3	25.2	125	70-130			
1,2,4-Trimethylbenzene	125	1.0	"	33.3	92.4	99.2	70-130			
1,3,5-Trimethylbenzene	78.5	1.0	"	33.3	40.0	115	70-130			
Surrogate: 1,2-Dichloroethane-d4	16.3		"	13.3		122	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.7	20-170			
Surrogate: 4-Bromofluorobenzene	14.2		"	13.3		106	21-167			

Matrix Spike Dup (BEJ0368-MSD1)

Source: 2110318-08

Prepared: 10/19/21 Analyzed: 10/20/21

Benzene	45.0	1.0	ug/l	33.3	9.79	106	34-141	8.60	30
Toluene	121	1.0	"	33.3	83.9	112	27-151	4.52	30
Ethylbenzene	64.4	1.0	"	33.3	31.0	100	29-160	13.8	30
m,p-Xylene	265	2.0	"	66.7	245	30.0	20-166	12.5	30
o-Xylene	121	1.0	"	33.3	94.7	77.4	33-159	4.39	30
Naphthalene	65.9	1.0	"	33.3	25.2	122	70-130	1.27	30
1,2,4-Trimethylbenzene	124	1.0	"	33.3	92.4	93.7	70-130	1.46	30
1,3,5-Trimethylbenzene	66.4	1.0	"	33.3	40.0	79.2	70-130	16.7	30
Surrogate: 1,2-Dichloroethane-d4	17.2		"	13.3		129	23-173		
Surrogate: Toluene-d8	13.7		"	13.3		103	20-170		
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.3	21-167		

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEJ0364 - EPA 3550A

Blank (BEJ0364-BLK1)

Prepared: 10/19/21 Analyzed: 10/20/21

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

LCS (BEJ0364-BS1)

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	476	50	mg/kg	500	95.2	70-130				
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Matrix Spike (BEJ0364-MS1)

Source: 2110302-05

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	473	50	mg/kg	500	111	72.4	70-130			
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Matrix Spike Dup (BEJ0364-MSD1)

Source: 2110302-05

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	492	50	mg/kg	500	111	76.2	70-130	4.01	20	
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Batch BEJ0369 - EPA 5030 Water MS

Blank (BEJ0369-BLK1)

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	ND	5.0	mg/L							
C28-C36 (ORO)	ND	5.0	"							

LCS (BEJ0369-BS1)

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	64.5	5.0	mg/L	50.0	129	54.3-147				
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LCS Dup (BEJ0369-BSD1)

Prepared: 10/19/21 Analyzed: 10/20/21

C10-C28 (DRO)	59.2	5.0	mg/L	50.0	118	54.3-147	8.62	15		
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEJ0370 - EPA 5030 Soil MS

Blank (BEJ0370-BLK1)

Prepared: 10/20/21 Analyzed: 10/21/21

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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0228		"	0.0333		68.3	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0245		"	0.0333		73.5	40-150			

LCS (BEJ0370-BS1)

Prepared: 10/20/21 Analyzed: 10/21/21

Acenaphthene	0.0271	0.00500	mg/kg	0.0333		81.4	31-137			
Anthracene	0.0273	0.00500	"	0.0333		81.9	30-120			
Benzo (a) anthracene	0.0264	0.00500	"	0.0333		79.1	30-120			
Benzo (a) pyrene	0.0269	0.00500	"	0.0333		80.6	30-120			
Benzo (b) fluoranthene	0.0277	0.00500	"	0.0333		83.2	30-120			
Benzo (k) fluoranthene	0.0293	0.00500	"	0.0333		87.9	30-120			
Chrysene	0.0276	0.00500	"	0.0333		82.7	30-120			
Dibenz (a,h) anthracene	0.0285	0.00500	"	0.0333		85.6	30-120			
Fluoranthene	0.0281	0.00500	"	0.0333		84.4	30-120			
Fluorene	0.0274	0.00500	"	0.0333		82.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0255	0.00500	"	0.0333		76.5	30-120			
Pyrene	0.0290	0.00500	"	0.0333		87.1	35-142			
1-Methylnaphthalene	0.0281	0.00500	"	0.0333		84.2	35-142			
2-Methylnaphthalene	0.0280	0.00500	"	0.0333		84.0	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0282		"	0.0333		84.5	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0285		"	0.0333		85.6	40-150			

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEJ0370 - EPA 5030 Soil MS

Matrix Spike (BEJ0370-MS1)	Source: 2110292-01			Prepared: 10/20/21 Analyzed: 10/21/21					
Acenaphthene	0.0209	0.00500	mg/kg	0.0333	ND	62.6	31-137		
Anthracene	0.0225	0.00500	"	0.0333	ND	67.6	30-120		
Benzo (a) anthracene	0.0214	0.00500	"	0.0333	ND	64.1	30-120		
Benzo (a) pyrene	0.0190	0.00500	"	0.0333	ND	57.0	30-120		
Benzo (b) fluoranthene	0.0189	0.00500	"	0.0333	ND	56.7	30-120		
Benzo (k) fluoranthene	0.0196	0.00500	"	0.0333	ND	58.8	30-120		
Chrysene	0.0215	0.00500	"	0.0333	ND	64.6	30-120		
Dibenz (a,h) anthracene	0.0204	0.00500	"	0.0333	ND	61.2	30-120		
Fluoranthene	0.0240	0.00500	"	0.0333	ND	72.1	30-120		
Fluorene	0.0220	0.00500	"	0.0333	ND	66.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0133	0.00500	"	0.0333	ND	40.0	30-120		
Pyrene	0.0227	0.00500	"	0.0333	ND	68.0	35-142		
1-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.0	15-130		
2-Methylnaphthalene	0.0232	0.00500	"	0.0333	ND	69.6	15-130		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0232</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>69.6</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0240</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>72.0</i>	<i>40-150</i>		

Matrix Spike Dup (BEJ0370-MSD1)	Source: 2110292-01			Prepared: 10/20/21 Analyzed: 10/21/21					
Acenaphthene	0.0235	0.00500	mg/kg	0.0333	ND	70.5	31-137	11.9	30
Anthracene	0.0246	0.00500	"	0.0333	ND	73.9	30-120	8.83	30
Benzo (a) anthracene	0.0236	0.00500	"	0.0333	ND	70.7	30-120	9.71	30
Benzo (a) pyrene	0.0224	0.00500	"	0.0333	ND	67.1	30-120	16.4	30
Benzo (b) fluoranthene	0.0218	0.00500	"	0.0333	ND	65.5	30-120	14.4	30
Benzo (k) fluoranthene	0.0221	0.00500	"	0.0333	ND	66.3	30-120	12.0	30
Chrysene	0.0241	0.00500	"	0.0333	ND	72.3	30-120	11.2	30
Dibenz (a,h) anthracene	0.0208	0.00500	"	0.0333	ND	62.4	30-120	1.92	30
Fluoranthene	0.0247	0.00500	"	0.0333	ND	74.1	30-120	2.70	30
Fluorene	0.0237	0.00500	"	0.0333	ND	71.1	30-120	7.47	30
Indeno (1,2,3-cd) pyrene	0.0139	0.00500	"	0.0333	ND	41.7	30-120	4.15	30
Pyrene	0.0258	0.00500	"	0.0333	ND	77.4	35-142	12.9	30
1-Methylnaphthalene	0.0244	0.00500	"	0.0333	ND	73.1	15-130	7.19	50
2-Methylnaphthalene	0.0250	0.00500	"	0.0333	ND	75.0	15-130	7.52	50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0249</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>74.6</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0244</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>73.1</i>	<i>40-150</i>		

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/28/21 12:13

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

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

Batch BEJ0447 - EPA 3050B

Blank (BEJ0447-BLK1)

Prepared: 10/22/21 Analyzed: 10/24/21

Boron ND 0.0100 mg/L

LCS (BEJ0447-BS1)

Prepared: 10/22/21 Analyzed: 10/24/21

Boron 5.36 0.0100 mg/L 5.00 107 80-120

Matrix Spike (BEJ0447-MS1)

Source: 2110302-03

Prepared: 10/22/21 Analyzed: 10/24/21

Boron 6.00 0.0100 mg/L 5.00 0.0773 119 75-125

Matrix Spike Dup (BEJ0447-MSD1)

Source: 2110302-03

Prepared: 10/22/21 Analyzed: 10/24/21

Boron 6.00 0.0100 mg/L 5.00 0.0773 118 75-125 0.0343 25

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/28/21 12:13

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEJ0424 - EPA 3050B

Blank (BEJ0424-BLK1)

Prepared & Analyzed: 10/22/21

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 (BEJ0424-BS1)

Prepared & Analyzed: 10/22/21

Arsenic	45.5	0.200	mg/kg wet	40.0	114	80-120
Barium	43.0	0.400	"	40.0	107	80-120
Cadmium	2.05	0.200	"	2.00	103	80-120
Copper	45.2	0.400	"	40.0	113	80-120
Lead	21.7	0.200	"	20.0	108	80-120
Nickel	44.5	0.400	"	40.0	111	80-120
Selenium	4.34	0.260	"	4.00	108	80-120
Silver	2.21	0.0200	"	2.00	111	80-120
Zinc	44.6	0.400	"	40.0	112	80-120

Duplicate (BEJ0424-DUP1)

Source: 2110190-02

Prepared & Analyzed: 10/22/21

Arsenic	2.37	0.234	mg/kg dry	2.43	2.57	20
Barium	81.4	0.469	"	75.8	7.09	20
Cadmium	0.151	0.234	"	0.183	19.3	20
Copper	6.28	0.469	"	7.49	17.6	20
Lead	12.7	0.234	"	12.4	1.83	20
Nickel	5.54	0.469	"	5.87	5.71	20
Selenium	0.542	0.305	"	0.660	19.6	20
Silver	0.0335	0.0234	"	0.0348	3.82	20
Zinc	28.8	0.469	"	33.4	14.8	20

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/28/21 12:13

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEJ0424 - EPA 3050B

Matrix Spike (BEJ0424-MS1)

Source: 2110190-02

Prepared & Analyzed: 10/22/21

Arsenic	54.6	0.234	mg/kg dry	46.9	2.43	111	75-125			
Barium	123	0.469	"	46.9	75.8	100	75-125			
Cadmium	3.09	0.234	"	2.34	0.183	124	75-125			
Copper	60.3	0.469	"	46.9	7.49	113	75-125			
Lead	37.1	0.234	"	23.4	12.4	105	75-125			
Nickel	58.3	0.469	"	46.9	5.87	112	75-125			
Selenium	5.29	0.305	"	4.69	0.660	98.7	75-125			
Silver	2.52	0.0234	"	2.34	0.0348	106	75-125			
Zinc	84.6	0.469	"	46.9	33.4	109	75-125			

Matrix Spike Dup (BEJ0424-MSD1)

Source: 2110190-02

Prepared & Analyzed: 10/22/21

Arsenic	58.1	0.234	mg/kg dry	46.9	2.43	119	75-125	6.15	25
Barium	133	0.469	"	46.9	75.8	123	75-125	8.37	25
Cadmium	2.76	0.234	"	2.34	0.183	110	75-125	11.1	25
Copper	54.1	0.469	"	46.9	7.49	99.4	75-125	10.8	25
Lead	31.7	0.234	"	23.4	12.4	82.1	75-125	15.7	25
Nickel	52.7	0.469	"	46.9	5.87	99.9	75-125	10.0	25
Selenium	4.92	0.305	"	4.69	0.660	90.9	75-125	7.18	25
Silver	2.31	0.0234	"	2.34	0.0348	97.3	75-125	8.42	25
Zinc	84.8	0.469	"	46.9	33.4	110	75-125	0.159	25

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/28/21 12:13

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BEJ0438 - 3060A Mod

Blank (BEJ0438-BLK1)

Prepared & Analyzed: 10/22/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEJ0438-BS1)

Prepared & Analyzed: 10/22/21

Chromium, Hexavalent 28.6 0.30 mg/kg wet 25.0 114 80-120

Duplicate (BEJ0438-DUP1)

Source: 2110281-01

Prepared & Analyzed: 10/22/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BEJ0438-MS1)

Source: 2110281-01

Prepared & Analyzed: 10/22/21

Chromium, Hexavalent 36.5 0.30 mg/kg dry 32.6 ND 112 75-125

Matrix Spike Dup (BEJ0438-MSD1)

Source: 2110281-01

Prepared & Analyzed: 10/22/21

Chromium, Hexavalent 36.1 0.30 mg/kg dry 32.6 ND 111 75-125 1.08 20

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/28/21 12:13

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

Summit Scientific

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

Batch BEJ0366 - General Preparation

Blank (BEJ0366-BLK1)

Prepared: 10/19/21 Analyzed: 10/23/21

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

LCS (BEJ0366-BS1)

Prepared: 10/19/21 Analyzed: 10/24/21

Calcium	5.42	0.0500	mg/L wet	5.00		108	70-130			
Magnesium	5.29	0.0500	"	5.00		106	70-130			
Sodium	5.66	0.0500	"	5.00		113	70-130			

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 10/28/21 12:13

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

Summit Scientific

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

Batch BEJ0385 - General Preparation

Duplicate (BEJ0385-DUP1)

Source: 2110295-01

Prepared: 10/20/21 Analyzed: 10/21/21

% Solids	78.7		%		77.5			1.49		20	
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Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/28/21 12:13

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

Summit Scientific

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

Batch BEJ0386 - General Preparation

Blank (BEJ0386-BLK1)

Prepared & Analyzed: 10/20/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEJ0386-BS1)

Prepared & Analyzed: 10/20/21

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BEJ0386-DUP1)

Source: 2110295-01

Prepared & Analyzed: 10/20/21

Specific Conductance (EC) 1.16 0.0100 mmhos/cm 1.16 0.00 20

Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 10/28/21 12:13

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

Summit Scientific

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

Batch BEJ0387 - General Preparation

LCS (BEJ0387-BS1)

Prepared & Analyzed: 10/20/21

pH	9.18	pH Units	9.18	100	95-105
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Duplicate (BEJ0387-DUP1)

Source: 2110295-01

Prepared & Analyzed: 10/20/21

pH	8.51	pH Units	8.47	0.471	20
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Summit Scientific

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

Project: Churchill 28-2 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/28/21 12:13

Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- 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