

**TABLE 1**  
**FORMER CECIL K 35-29, 30; SCHWAB 26-12F, 13F TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (ft bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(2)</sup> (mg/kg)
<b>COGCC Table 910-1 Soil Standard (mg/kg) <sup>(1)</sup></b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>23</b>	<b>500</b>
SS01-N @ 5'	2/5/2020	5	0.17	<0.0050	0.49	<0.010	0.28	720
S01 @ 22'	2/10/2020	22	<0.0020	<0.0050	<0.0050	0.010	<0.010	<50
GS06 @ 16'	2/10/2020	16	<0.0020	<0.0050	<0.0050	<0.010	<0.010	7.4
S02 @ 22'	2/14/2020	22	0.17	<0.0050	0.32	0.17	0.095	520
S03 @ 22.5'	2/18/2020	22.5	0.0046	<0.0050	<0.0050	<0.010	<0.010	0.57
S04 @ 22'	2/20/2020	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S05 @ 8'	2/20/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S06 @ 14'	2/20/2020	14	<0.0020	<0.0050	0.013	0.057	<0.010	9.4
S07 @ 22'	2/25/2020	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S08 @ 8'	2/26/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S09 @ 14'	2/26/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	0.50
S10 @ 8'	2/26/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S11 @ 14'	2/26/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	2.7
S12 @ 22'	2/27/2020	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S13 @ 8'	2/27/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S14 @ 14'	2/27/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S15 @ 8'	2/28/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S16 @ 14'	2/28/2020	14	<0.0020	<0.0050	0.30	2.2	0.057	200
S17 @ 22'	2/28/2020	22	0.032	0.013	0.27	0.31	0.028	310
S18 @ 22'	3/3/2020	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S19 @ 14'	3/3/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S20 @ 8'	3/3/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S21 @ 8'	3/4/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S22 @ 14'	3/4/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S23 @ 22'	3/4/2020	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S24 @ 22'	3/5/2020	22	<0.0020	<0.0050	<0.0050	0.027	<0.010	0.70
S25 @ 8'	3/5/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S26 @ 14'	3/5/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S27 @ 22'	3/5/2020	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S28 @ 8'	3/6/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S29 @ 14'	3/6/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S30 @ 22'	3/6/2020	22	<0.0020	<0.0050	<0.0050	0.032	<0.010	0.58
S31 @ 8'	3/9/2020	8	<0.0020	<0.0050	0.011	0.10	<0.010	1.1
S32 @ 14'	3/9/2020	14	<0.0020	<0.0050	<0.0050	0.019	<0.010	0.80
S33 @ 22'	3/9/2020	22	<0.0020	<0.0050	0.0051	0.049	0.018	34
S34 @ 8'	3/10/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S35 @ 14'	3/10/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	4.1
S36 @ 22'	3/10/2020	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	1.2
S37 @ 8'	3/10/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S38 @ 14'	3/10/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S39 @ 8'	3/11/2020	8	<0.0020	<0.0050	<0.0050	0.029	<0.010	35
S40 @ 14'	3/11/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S41 @ 22'	3/11/2020	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	7.4
S42 @ 8'	3/11/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	27
S43 @ 14'	3/11/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S44 @ 22'	3/11/2020	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S45 @ 8'	3/13/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50

**TABLE 1**  
**FORMER CECIL K 35-29, 30; SCHWAB 26-12F, 13F TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (ft bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(2)</sup> (mg/kg)
<b>COGCC Table 910-1 Soil Standard (mg/kg) <sup>(1)</sup></b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>23</b>	<b>500</b>
S46 @ 14'	3/13/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	14
S47 @ 22'	3/13/2020	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S48 @ 8'	3/13/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S49 @ 14'	3/13/2020	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S50 @ 22'	3/13/2020	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective May 1, 2018.

2. TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

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

GRO = Total volatile petroleum hydrocarbons - gasoline range organics

DRO = Total extractable petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

ft bgs = Feet below ground surface

**BOLD** = Analytical result is in exceedance of COGCC soil standards.

**TABLE 2**  
**FORMER CECIL K 35-29, 30; SCHWAB 26-12F, 13F TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**INORGANIC COMPOUNDS**

Sample ID	Date Sampled	Depth (ft bgs)	pH (units)	EC (mmhos/cm)
<b>COGCC Table 910-1 Soil Standard (mg/kg) <sup>(1)</sup></b>			<b>6-9</b>	<b>&lt;4</b>
SS01-N @ 5'	2/5/2020	5	8.20	0.375

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective May 1, 2018.

COGCC = Colorado Oil and Gas Conservation Commission

ft bgs = Feet below ground surface

EC = Electrical conductivity

mmhos/cm = millimhos per centimeter

**TABLE 3**  
**FORMER CECIL K 35-29, 30; SCHWAB 26-12F, 13F TANK BATTERY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water (ft bgs) <sup>(2)</sup>
<b>COGCC Table 910-1 Groundwater Standard (µg/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
GS01	3/16/2020	<b>12</b>	26	3.0	51	~ 10

**Notes:**

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective May 1, 2018.

2. Depth to groundwater measured from ground surface.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L= Micrograms per liter

ft bgs = Feet Below ground surface

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

**BOLD** = Analytical result is in exceedance of COGCC groundwater standards.

## **ATTACHMENT A**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 20, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2002021

Enclosed are the results of analyses for samples received by Summit Scientific on 02/05/20 17:36. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/20/20 12:48

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01-N@5'	2002021-01	Soil	02/05/20 13:35	02/05/20 17:36

Summit Scientific

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

# Summit Scientific

S<sub>2</sub>

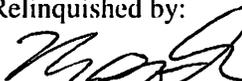
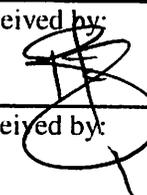
2002021

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

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name: Schwab 26-14F  
Sampler Name: Max Dahlgren 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	8260 BTEX	8260B GBTEXN	8015 DRO	pH / EC	Hold		
1	SS01-N	2/5/20	1335	1			X			X				X	X	X			
2	SS02-N		1340	1													X		
3	SS03-N		1345	1													X		
4	SS04-N		1350	1													X		
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by:  Date/Time: 2/5/20 1630	Received by: Tasman's Lock Box Date/Time:	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box Date/Time: 02/05/2020 1730	Received by:  Date/Time: 02/05/2020 1730	Sample Integrity: Temperature Upon Receipt: 3.4	
Relinquished by:	Received by:	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

### Sample Receipt Checklist

S2 Work Order 2002021

Client: PDC / TASMAN Client Project ID: SCHWAB 26-14F

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

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

Temp (°C)	3.4
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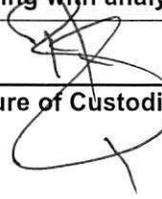
Thermometer ID: 61857155-K

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

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

2/5/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/20/20 12:48

**SS01-N@5'**  
**2002021-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/05/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.17</b>	0.0020	mg/kg	1	2002059	02/05/20	02/05/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.49</b>	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.28</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>440</b>	5.0	"	10	"	"	"	"	

Date Sampled: **02/05/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	114 %	23-173	"	"	"	"	"	"	
Surrogate: Toluene-d8	95.0 %	20-170	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	230 %	21-167	"	"	"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/05/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>280</b>	50	mg/kg	1	2002058	02/05/20	02/05/20	EPA 8015M	

Date Sampled: **02/05/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	108 %	30-150	"	"	"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/05/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.20</b>		pH Units	1	2002057	"	02/05/20	EPA 9045D	

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/20/20 12:48

**SS01-N@5'**  
**2002021-01 (Soil)**

**Summit Scientific**

**Specific Conductance by EPA Method 120.1**

Date Sampled: **02/05/20 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	<b>0.375</b>	0.0100	mmhos/cm	1	2002056	02/05/20	02/05/20	EPA 120.1	

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1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/20/20 12:48

**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 2002059 - EPA 5030 Soil MS**

**Blank (2002059-BLK1)**

Prepared: 02/05/20 Analyzed: 02/06/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0400		100	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.7	21-167			

**LCS (2002059-BS1)**

Prepared: 02/05/20 Analyzed: 02/06/20

Benzene	0.0927	0.0020	mg/kg	0.100		92.7	70-130			
Toluene	0.0919	0.0050	"	0.100		91.9	70-130			
Ethylbenzene	0.113	0.0050	"	0.100		113	70-130			
m,p-Xylene	0.219	0.010	"	0.200		109	70-130			
o-Xylene	0.109	0.0050	"	0.100		109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0401		"	0.0400		100	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.6	21-167			

**Matrix Spike (2002059-MS1)**

Source: 2002021-01

Prepared: 02/05/20 Analyzed: 02/06/20

Benzene	0.0967	0.0020	mg/kg	0.100	0.171	NR	70-130			
Toluene	0.0979	0.0050	"	0.100	ND	97.9	70-130			
Ethylbenzene	0.117	0.0050	"	0.100	0.487	NR	70-130			
m,p-Xylene	0.231	0.010	"	0.200	0.00771	112	70-130			
o-Xylene	0.116	0.0050	"	0.100	ND	116	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0445		"	0.0400		111	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.1	21-167			

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/20/20 12:48

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

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

**Batch 2002059 - EPA 5030 Soil MS**

**Matrix Spike Dup (2002059-MSD1)**

Source: 2002021-01

Prepared: 02/05/20 Analyzed: 02/06/20

Benzene	0.0741	0.0020	mg/kg	0.100	0.171	NR	70-130	26.5	30	
Toluene	0.107	0.0050	"	0.100	ND	107	70-130	9.09	30	
Ethylbenzene	0.104	0.0050	"	0.100	0.487	NR	70-130	12.4	30	
m,p-Xylene	0.259	0.010	"	0.200	0.00771	126	70-130	11.4	30	
o-Xylene	0.130	0.0050	"	0.100	ND	130	70-130	11.3	30	
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	21-167			

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 1775 Sherman St. STE. 3000  
 Denver CO, 80203

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/20/20 12:48

**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 2002058 - EPA 3550A**

**Blank (2002058-BLK1)**

Prepared & Analyzed: 02/05/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2002058-BS1)**

Prepared & Analyzed: 02/05/20

C10-C28 (DRO) 529 50 mg/kg 500 106 70-130

**Matrix Spike (2002058-MS1)**

Source: 2002019-01

Prepared & Analyzed: 02/05/20

C10-C28 (DRO) 1080 50 mg/kg 500 572 102 70-130

**Matrix Spike Dup (2002058-MSD1)**

Source: 2002019-01

Prepared & Analyzed: 02/05/20

C10-C28 (DRO) 943 50 mg/kg 500 572 74.2 70-130 13.6 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/20/20 12:48

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

**Summit Scientific**

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

**Batch 2002057 - General Preparation**

**LCS (2002057-BS1)**

Prepared & Analyzed: 02/05/20

pH	9.13	pH Units	9.18	99.5	95-105
----	------	----------	------	------	--------

**Duplicate (2002057-DUP1)**

Source: 2002020-02

Prepared & Analyzed: 02/05/20

pH	7.84	pH Units	7.84	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/20/20 12:48

**Specific Conductance by EPA Method 120.1 - Quality Control**  
**Summit Scientific**

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

**Batch 2002056 - General Preparation**

**Blank (2002056-BLK1)**

Prepared & Analyzed: 02/05/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (2002056-BS1)**

Prepared & Analyzed: 02/05/20

Specific Conductance (EC) 0.755 0.0100 mmhos/cm 0.750 101 90-110

**Duplicate (2002056-DUP1)**

Source: 2002020-02

Prepared & Analyzed: 02/05/20

Specific Conductance (EC) 5.90 0.0100 mmhos/cm 6.52 9.90 20

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/20/20 12:48

### 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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 11, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2002057

Enclosed are the results of analyses for samples received by Summit Scientific on 02/10/20 17:31. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
02/11/20 06:11

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01@22'	2002057-01	Soil	02/10/20 13:03	02/10/20 17:31
GS06@16'	2002057-02	Soil	02/10/20 14:53	02/10/20 17:31

Summit Scientific

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



S2 Work Order 2002057

Client: PDC Client Project ID: LECIL K 35-29,30;

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: SCHWAB 26-12F,13F

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

Temp (°C)	4.8
-----------	-----

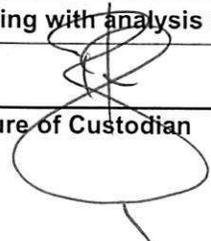
Thermometer ID: 61857155-K

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

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

2/10/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/11/20 06:11

**S01@22'**  
**2002057-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/10/20 13:03**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	2002092	02/10/20	02/10/20	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.010</b>	0.010		"	"	"	"	"	"	
Naphthalene	ND	0.010		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/10/20 13:03**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		107 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/10/20 13:03**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	2002093	02/10/20	02/10/20	EPA 8015M	

Date Sampled: **02/10/20 13:03**

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

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/11/20 06:11

**GS06@16'**  
**2002057-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/10/20 14:53**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2002092	02/10/20	02/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>7.4</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **02/10/20 14:53**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/10/20 14:53**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2002093	02/10/20	02/10/20	EPA 8015M	

Date Sampled: **02/10/20 14:53**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		97.8 %	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/11/20 06:11

### 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 2002092 - EPA 5030 Soil MS

##### Blank (2002092-BLK1)

Prepared & Analyzed: 02/10/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0412		"	0.0400		103	23-173			
<i>Surrogate: Toluene-d8</i>	0.0398		"	0.0400		99.4	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0397		"	0.0400		99.2	21-167			

##### LCS (2002092-BS1)

Prepared & Analyzed: 02/10/20

Benzene	0.0865	0.0020	mg/kg	0.100		86.5	70-130			
Toluene	0.0940	0.0050	"	0.100		94.0	70-130			
Ethylbenzene	0.0891	0.0050	"	0.100		89.1	70-130			
m,p-Xylene	0.161	0.010	"	0.200		80.3	70-130			
o-Xylene	0.0847	0.0050	"	0.100		84.7	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0376		"	0.0400		93.9	23-173			
<i>Surrogate: Toluene-d8</i>	0.0488		"	0.0400		122	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0358		"	0.0400		89.6	21-167			

##### Matrix Spike (2002092-MS1)

Source: 2002057-01

Prepared & Analyzed: 02/10/20

Benzene	0.0941	0.0020	mg/kg	0.100	ND	94.1	70-130			
Toluene	0.101	0.0050	"	0.100	ND	101	70-130			
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130			
m,p-Xylene	0.195	0.010	"	0.200	0.0102	92.4	70-130			
o-Xylene	0.0964	0.0050	"	0.100	ND	96.4	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0409		"	0.0400		102	23-173			
<i>Surrogate: Toluene-d8</i>	0.0439		"	0.0400		110	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0375		"	0.0400		93.8	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 02/11/20 06:11

**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 2002092 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (2002092-MSD1)</b>	<b>Source: 2002057-01</b>			<b>Prepared &amp; Analyzed: 02/10/20</b>							
Benzene	0.0991	0.0020	mg/kg	0.100	ND	99.1	70-130	5.19	30		
Toluene	0.106	0.0050	"	0.100	ND	106	70-130	4.43	30		
Ethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130	6.15	30		
m,p-Xylene	0.196	0.010	"	0.200	0.0102	93.1	70-130	0.705	30		
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130	6.68	30		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0423</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0375</i>		<i>"</i>	<i>0.0400</i>		<i>93.8</i>	<i>21-167</i>				

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 02/11/20 06:11

**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 2002093 - EPA 3550A**

**Blank (2002093-BLK1)**

Prepared & Analyzed: 02/10/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2002093-BS1)**

Prepared & Analyzed: 02/10/20

C10-C28 (DRO) 585 50 mg/kg 500 117 70-130

**Matrix Spike (2002093-MS1)**

Source: 2002057-01

Prepared & Analyzed: 02/10/20

C10-C28 (DRO) 519 50 mg/kg 500 17.3 100 70-130

**Matrix Spike Dup (2002093-MSD1)**

Source: 2002057-01

Prepared & Analyzed: 02/10/20

C10-C28 (DRO) 538 50 mg/kg 500 17.3 104 70-130 3.66 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/11/20 06:11

### 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

February 16, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2002126

Enclosed are the results of analyses for samples received by Summit Scientific on 02/14/20 17:32. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
02/16/20 14:25

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S02@22'	2002126-01	Soil	02/14/20 12:46	02/14/20 17:32

Summit Scientific

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



**Sample Receipt Checklist**

S2 Work Order 2002126

Client: PDC Client Project ID: CECIL K 35-29;30;

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: SCHWAB 26-12F,13F

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

Temp (°C)	2.8
-----------	-----

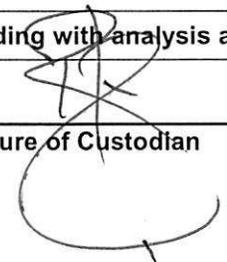
Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

2/14/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/16/20 14:25

**S02@22'**  
**2002126-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/14/20 12:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>0.17</b>	0.0020		mg/kg	1	2002151	02/14/20	02/15/20	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.32</b>	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.17</b>	0.010		"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.095</b>	0.010		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>520</b>	5.0		"	10	"	"	"	"	

Date Sampled: **02/14/20 12:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		126 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		87.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/14/20 12:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	2002152	02/14/20	02/14/20	EPA 8015M	

Date Sampled: **02/14/20 12:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		99.9 %		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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/16/20 14:25

### 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 2002151 - EPA 5030 Soil MS

##### Blank (2002151-BLK1)

Prepared & Analyzed: 02/14/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0400		99.8	23-173			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.3	21-167			

##### LCS (2002151-BS1)

Prepared & Analyzed: 02/14/20

Benzene	0.102	0.0020	mg/kg	0.100		102	70-130			
Toluene	0.110	0.0050	"	0.100		110	70-130			
Ethylbenzene	0.115	0.0050	"	0.100		115	70-130			
m,p-Xylene	0.205	0.010	"	0.200		102	70-130			
o-Xylene	0.107	0.0050	"	0.100		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0419		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.2	21-167			

##### Matrix Spike (2002151-MS1)

Source: 2002114-01

Prepared & Analyzed: 02/14/20

Benzene	0.101	0.0020	mg/kg	0.100	ND	101	70-130			
Toluene	0.108	0.0050	"	0.100	ND	108	70-130			
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130			
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130			
o-Xylene	0.109	0.0050	"	0.100	ND	109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0425		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.4	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 02/16/20 14:25

**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 2002151 - EPA 5030 Soil MS**

**Matrix Spike Dup (2002151-MSD1)**

Source: 2002114-01

Prepared & Analyzed: 02/14/20

Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130	3.46	30
Toluene	0.114	0.0050	"	0.100	ND	114	70-130	4.79	30
Ethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130	1.46	30
m,p-Xylene	0.213	0.010	"	0.200	ND	107	70-130	2.39	30
o-Xylene	0.112	0.0050	"	0.100	ND	112	70-130	3.28	30
Surrogate: 1,2-Dichloroethane-d4	0.0426		"	0.0400		106	23-173		
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170		
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		95.1	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 02/16/20 14:25

**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 2002152 - EPA 3550A**

**Blank (2002152-BLK1)**

Prepared & Analyzed: 02/14/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2002152-BS1)**

Prepared & Analyzed: 02/14/20

C10-C28 (DRO) 581 50 mg/kg 500 116 70-130

**Matrix Spike (2002152-MS1)**

Source: 2002114-01

Prepared & Analyzed: 02/14/20

C10-C28 (DRO) 475 50 mg/kg 500 16.3 91.7 70-130

**Matrix Spike Dup (2002152-MSD1)**

Source: 2002114-01

Prepared & Analyzed: 02/14/20

C10-C28 (DRO) 478 50 mg/kg 500 16.3 92.4 70-130 0.655 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/16/20 14:25

### 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

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 19, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2002149

Enclosed are the results of analyses for samples received by Summit Scientific on 02/18/20 17:28. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
02/19/20 06:28

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S03@22.5'	2002149-01	Soil	02/18/20 14:57	02/18/20 17:28

Summit Scientific

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



**Sample Receipt Checklist**

S2 Work Order 2002149

Client: PDC Client Project ID: CECIL K 35-29, 30;

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: SCHWAB 26-12f

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

Temp (°C)	4.7
-----------	-----

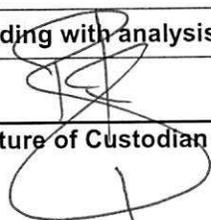
Thermometer ID: 61857155-K

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

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

2/18/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/19/20 06:28

**S03@22.5'**  
**2002149-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/18/20 14:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>0.0046</b>	0.0020		mg/kg	1	2002178	02/18/20	02/18/20	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
Naphthalene	ND	0.010		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.57</b>	0.50		"	"	"	"	"	"	

Date Sampled: **02/18/20 14:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		104 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		93.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/18/20 14:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	2002177	02/18/20	02/18/20	EPA 8015M	

Date Sampled: **02/18/20 14:57**

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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/19/20 06:28

**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 2002178 - EPA 5030 Soil MS**

**Blank (2002178-BLK1)**

Prepared & Analyzed: 02/18/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0374		"	0.0400		93.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.7	21-167			

**LCS (2002178-BS1)**

Prepared & Analyzed: 02/18/20

Benzene	0.0848	0.0020	mg/kg	0.100		84.8	70-130			
Toluene	0.0958	0.0050	"	0.100		95.8	70-130			
Ethylbenzene	0.0995	0.0050	"	0.100		99.5	70-130			
m,p-Xylene	0.218	0.010	"	0.200		109	70-130			
o-Xylene	0.0989	0.0050	"	0.100		98.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.6	23-173			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.6	21-167			

**Matrix Spike (2002178-MS1)**

Source: 2002149-01

Prepared & Analyzed: 02/18/20

Benzene	0.0908	0.0020	mg/kg	0.100	0.00465	86.2	70-130			
Toluene	0.0931	0.0050	"	0.100	ND	93.1	70-130			
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130			
m,p-Xylene	0.213	0.010	"	0.200	0.00411	104	70-130			
o-Xylene	0.0964	0.0050	"	0.100	ND	96.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0375		"	0.0400		93.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	21-167			

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 02/19/20 06:28

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch 2002178 - EPA 5030 Soil MS**

Matrix Spike Dup (2002178-MSD1)	Source: 2002149-01			Prepared & Analyzed: 02/18/20						
Benzene	0.0930	0.0020	mg/kg	0.100	0.00465	88.4	70-130	2.38	30	
Toluene	0.0960	0.0050	"	0.100	ND	96.0	70-130	3.11	30	
Ethylbenzene	0.0997	0.0050	"	0.100	ND	99.7	70-130	1.70	30	
m,p-Xylene	0.214	0.010	"	0.200	0.00411	105	70-130	0.535	30	
o-Xylene	0.0938	0.0050	"	0.100	ND	93.8	70-130	2.81	30	
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 02/19/20 06:28

**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 2002177 - EPA 3550A**

**Blank (2002177-BLK1)**

Prepared & Analyzed: 02/18/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2002177-BS1)**

Prepared & Analyzed: 02/18/20

C10-C28 (DRO) 554 50 mg/kg 500 111 70-130

**Matrix Spike (2002177-MS1)**

Source: 2002122-02

Prepared & Analyzed: 02/18/20

C10-C28 (DRO) 639 50 mg/kg 500 68.7 114 70-130

**Matrix Spike Dup (2002177-MSD1)**

Source: 2002122-02

Prepared & Analyzed: 02/18/20

C10-C28 (DRO) 599 50 mg/kg 500 68.7 106 70-130 6.52 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/19/20 06:28

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 21, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2002184

Enclosed are the results of analyses for samples received by Summit Scientific on 02/20/20 17:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
02/21/20 06:30

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S04@22'	2002184-01	Soil	02/20/20 11:31	02/20/20 17:45
S05@8'	2002184-02	Soil	02/20/20 13:40	02/20/20 17:45
S06@14'	2002184-03	Soil	02/20/20 13:44	02/20/20 17:45

Summit Scientific

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



**Sample Receipt Checklist**

S2 Work Order 2002184

Client: PDC Client Project ID: CEDUK 35-29, 30; SchwAB

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: 26-12F, 23F

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

Temp (°C)	<u>2.6</u>
-----------	------------

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

\_\_\_\_\_  
Custodian Printed Name or Initials

\_\_\_\_\_  
Signature of Custodian

02/26/2020  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/21/20 06:30

**S04@22'**  
**2002184-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/20/20 11:31**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2002200	02/20/20	02/20/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/20/20 11:31**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/20/20 11:31**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2002201	"	02/20/20	EPA 8015M	

Date Sampled: **02/20/20 11:31**

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

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/21/20 06:30

**S05@8'**  
**2002184-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/20/20 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2002200	02/20/20	02/20/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/20/20 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/20/20 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2002201	"	02/20/20	EPA 8015M	

Date Sampled: **02/20/20 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		97.8 %	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/21/20 06:30

**S06@14'**  
**2002184-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/20/20 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	2002200	02/20/20	02/21/20	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.013</b>	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.057</b>	0.010		"	"	"	"	"	"	
Naphthalene	ND	0.010		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>9.4</b>	0.50		"	"	"	"	"	"	

Date Sampled: **02/20/20 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		98.9 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		87.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		129 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/20/20 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	2002201	"	02/21/20	EPA 8015M	

Date Sampled: **02/20/20 13:44**

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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/21/20 06:30

**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 2002200 - EPA 5030 Soil MS**

**Blank (2002200-BLK1)**

Prepared & Analyzed: 02/20/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0411		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	21-167			

**LCS (2002200-BS1)**

Prepared & Analyzed: 02/20/20

Benzene	0.0856	0.0020	mg/kg	0.100		85.6	70-130			
Toluene	0.0916	0.0050	"	0.100		91.6	70-130			
Ethylbenzene	0.0809	0.0050	"	0.100		80.9	70-130			
m,p-Xylene	0.159	0.010	"	0.200		79.3	70-130			
o-Xylene	0.0801	0.0050	"	0.100		80.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	21-167			

**Matrix Spike (2002200-MS1)**

Source: 2002169-01

Prepared & Analyzed: 02/20/20

Benzene	0.0857	0.0020	mg/kg	0.100	ND	85.7	70-130			
Toluene	0.0916	0.0050	"	0.100	ND	91.6	70-130			
Ethylbenzene	0.0816	0.0050	"	0.100	ND	81.6	70-130			
m,p-Xylene	0.159	0.010	"	0.200	0.00564	76.8	70-130			
o-Xylene	0.0832	0.0050	"	0.100	ND	83.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		104	21-167			

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 02/21/20 06:30

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

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

**Batch 2002200 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (2002200-MSD1)</b>	<b>Source: 2002169-01</b>			<b>Prepared &amp; Analyzed: 02/20/20</b>						
Benzene	0.0850	0.0020	mg/kg	0.100	ND	85.0	70-130	0.844	30	
Toluene	0.0912	0.0050	"	0.100	ND	91.2	70-130	0.394	30	
Ethylbenzene	0.0802	0.0050	"	0.100	ND	80.2	70-130	1.67	30	
m,p-Xylene	0.161	0.010	"	0.200	0.00564	77.5	70-130	0.844	30	
o-Xylene	0.0818	0.0050	"	0.100	ND	81.8	70-130	1.75	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0421</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0413</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>21-167</i>			

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 02/21/20 06:30

**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 2002201 - EPA 3550A**

**Blank (2002201-BLK1)**

Prepared & Analyzed: 02/20/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2002201-BS1)**

Prepared & Analyzed: 02/20/20

C10-C28 (DRO) 578 50 mg/kg 500 116 70-130

**Matrix Spike (2002201-MS1)**

Source: 2002169-01

Prepared & Analyzed: 02/20/20

C10-C28 (DRO) 557 50 mg/kg 500 9.01 110 70-130

**Matrix Spike Dup (2002201-MSD1)**

Source: 2002169-01

Prepared & Analyzed: 02/20/20

C10-C28 (DRO) 562 50 mg/kg 500 9.01 111 70-130 0.777 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/21/20 06:30

### 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

February 26, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2002247

Enclosed are the results of analyses for samples received by Summit Scientific on 02/25/20 17:20. 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, stylized initial "M".

Muri Premer For Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
02/26/20 13:00

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S07@22'	2002247-01	Soil	02/25/20 10:29	02/25/20 17:20

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.*



**Sample Receipt Checklist**

S2 Work Order 2002247

Client: PDC Client Project ID: CEIL K 35 - 29, 30;

Shipped Via:  H.D./P.U./FedEx/UPS/USPS/Other  Airbill #: SCHWAB 26 - 12F, 13F

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

Temp (°C)	4.9
-----------	-----

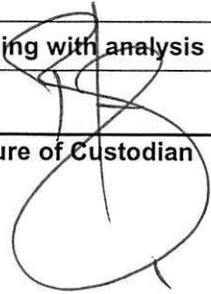
Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

2/25/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/26/20 13:00

**S07@22'**  
**2002247-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/25/20 10:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2002261	02/25/20	02/25/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/25/20 10:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		96.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/25/20 10:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2002262	"	02/25/20	EPA 8015M	

Date Sampled: **02/25/20 10:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		99.3 %	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/26/20 13:00

### 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 2002261 - EPA 5030 Soil MS

##### Blank (2002261-BLK1)

Prepared: 02/25/20 Analyzed: 02/26/20

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Naphthalene	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0368		"	0.0400		91.9	23-173				
Surrogate: Toluene-d8	0.0418		"	0.0400		104	20-170				
Surrogate: 4-Bromofluorobenzene	0.0360		"	0.0400		90.1	21-167				

##### LCS (2002261-BS1)

Prepared: 02/25/20 Analyzed: 02/26/20

Benzene	0.0926	0.0020	mg/kg	0.100		92.6	70-130				
Toluene	0.0877	0.0050	"	0.100		87.7	70-130				
Ethylbenzene	0.0930	0.0050	"	0.100		93.0	70-130				
m,p-Xylene	0.183	0.010	"	0.200		91.3	70-130				
o-Xylene	0.0931	0.0050	"	0.100		93.1	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		99.0	23-173				
Surrogate: Toluene-d8	0.0420		"	0.0400		105	20-170				
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.4	21-167				

##### Matrix Spike (2002261-MS1)

Source: 2002243-01

Prepared: 02/25/20 Analyzed: 02/26/20

Benzene	0.113	0.0020	mg/kg	0.100	ND	113	70-130				
Toluene	0.122	0.0050	"	0.100	ND	122	70-130				
Ethylbenzene	0.129	0.0050	"	0.100	ND	129	70-130				
m,p-Xylene	0.232	0.010	"	0.200	ND	116	70-130				
o-Xylene	0.122	0.0050	"	0.100	ND	122	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	23-173				
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170				
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/26/20 13:00

**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 2002261 - EPA 5030 Soil MS**

**Matrix Spike Dup (2002261-MSD1)**

Source: 2002243-01

Prepared: 02/25/20 Analyzed: 02/26/20

Benzene	0.106	0.0020	mg/kg	0.100	ND	106	70-130	6.91	30	
Toluene	0.120	0.0050	"	0.100	ND	120	70-130	1.83	30	
Ethylbenzene	0.126	0.0050	"	0.100	ND	126	70-130	2.02	30	
m,p-Xylene	0.228	0.010	"	0.200	ND	114	70-130	2.01	30	
o-Xylene	0.119	0.0050	"	0.100	ND	119	70-130	2.57	30	
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	21-167			

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 02/26/20 13:00

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 2002262 - EPA 3550A**

**Blank (2002262-BLK1)**

Prepared & Analyzed: 02/25/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2002262-BS1)**

Prepared & Analyzed: 02/25/20

C10-C28 (DRO) 609 50 mg/kg 500 122 70-130

**Matrix Spike (2002262-MS1)**

Source: 2002243-01

Prepared & Analyzed: 02/25/20

C10-C28 (DRO) 599 50 mg/kg 500 24.2 115 70-130

**Matrix Spike Dup (2002262-MSD1)**

Source: 2002243-01

Prepared & Analyzed: 02/25/20

C10-C28 (DRO) 568 50 mg/kg 500 24.2 109 70-130 5.37 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/26/20 13:00

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 23, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2002263

Enclosed are the results of analyses for samples received by Summit Scientific on 02/26/20 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/23/20 14:51

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S08@8'	2002263-01	Soil	02/26/20 09:42	02/26/20 17:30
S09@14'	2002263-02	Soil	02/26/20 09:45	02/26/20 17:30
S10@8'	2002263-03	Soil	02/26/20 10:02	02/26/20 17:30
S11@14'	2002263-04	Soil	02/26/20 10:05	02/26/20 17:30

Summit Scientific

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

# Summit Scientific

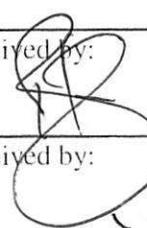
S<sub>2</sub>

2002263

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

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name: Cecil K 35-29,30; Schwab 26-12F,13F  
Sampler Name: Cody Gessell 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	<del>8260B</del>	8260B GBTEXN	8015 DRO	<del>PHATE</del>	
1	S08 @ 8'	2/26/20	0942	1			X		X				X	X			
2	S09 @ 14'	↓	0945	1			X		X				↓	↓			
3	S10 @ 8'		1002	1			X		X								
4	S11 @ 14'	↓	1005	1			X		X				↓	↓			
5																	
6																	
7																	
8																	
9																	
10																	
Relinquished by: Cody Gessell		Date/Time: 2/26/20 1651		Received by: Tasman's Lock Box		Date/Time: 2/26/20 1651		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: 02/26/2020 1730		Received by: 		Date/Time: 02/26/2020 1730		Sample Integrity:		Temperature Upon Receipt: 4.3		Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Relinquished by:		Date/Time:		Received by:		Date/Time:											

### Sample Receipt Checklist

S2 Work Order 2002263

Client: PDC / TASMAN Client Project ID: CECIL K 35 - 29, 30 ;

Shipped Via:  H.D./P.U./FedEx/UPS/USPS/Other  Airbill #: SCHWAB 26-12F, 13F

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

Temp (°C)	4.3
-----------	-----

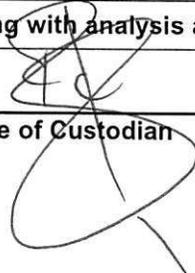
Thermometer ID: 61857155-K

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

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

2/26/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/23/20 14:51

**S08@8'**  
**2002263-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/26/20 09:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2002276	02/26/20	02/27/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/26/20 09:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/26/20 09:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2002277	"	02/26/20	EPA 8015M	

Date Sampled: **02/26/20 09:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/23/20 14:51

**S09@14'**  
**2002263-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/26/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2002276	02/26/20	02/26/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.50</b>	0.50	"	"	"	"	"	"	

Date Sampled: **02/26/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		94.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/26/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2002277	"	02/26/20	EPA 8015M	

Date Sampled: **02/26/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		123 %	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/23/20 14:51

**S10@8'**  
**2002263-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/26/20 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2002276	02/26/20	02/26/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/26/20 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		98.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/26/20 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2002277	"	02/26/20	EPA 8015M	

Date Sampled: **02/26/20 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		114 %	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/23/20 14:51

**S11@14'**  
**2002263-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/26/20 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2002276	02/26/20	02/26/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>2.7</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **02/26/20 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		121 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/26/20 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2002277	"	02/27/20	EPA 8015M	

Date Sampled: **02/26/20 10:05**

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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/23/20 14:51

**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 2002276 - EPA 5030 Soil MS**

**Blank (2002276-BLK1)**

Prepared: 02/26/20 Analyzed: 02/27/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0411		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.7	21-167			

**LCS (2002276-BS1)**

Prepared: 02/26/20 Analyzed: 02/27/20

Benzene	0.0988	0.0020	mg/kg	0.100		98.8	70-130			
Toluene	0.108	0.0050	"	0.100		108	70-130			
Ethylbenzene	0.111	0.0050	"	0.100		111	70-130			
m,p-Xylene	0.201	0.010	"	0.200		100	70-130			
o-Xylene	0.104	0.0050	"	0.100		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0364		"	0.0400		90.9	23-173			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.0	21-167			

**Matrix Spike (2002276-MS1)**

Source: 2002259-01

Prepared: 02/26/20 Analyzed: 02/27/20

Benzene	0.106	0.0020	mg/kg	0.100	ND	106	70-130			
Toluene	0.111	0.0050	"	0.100	ND	111	70-130			
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130			
m,p-Xylene	0.210	0.010	"	0.200	ND	105	70-130			
o-Xylene	0.110	0.0050	"	0.100	ND	110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.6	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.7	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/23/20 14:51

**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 2002276 - EPA 5030 Soil MS**

**Matrix Spike Dup (2002276-MSD1)**

Source: 2002259-01

Prepared: 02/26/20 Analyzed: 02/27/20

Benzene	0.117	0.0020	mg/kg	0.100	ND	117	70-130	9.65	30	
Toluene	0.117	0.0050	"	0.100	ND	117	70-130	5.81	30	
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	11.9	30	
m,p-Xylene	0.246	0.010	"	0.200	ND	123	70-130	15.5	30	
o-Xylene	0.128	0.0050	"	0.100	ND	128	70-130	15.0	30	
Surrogate: 1,2-Dichloroethane-d4	0.0433		"	0.0400		108	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0353		"	0.0400		88.4	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/23/20 14:51

**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 2002277 - EPA 3550A**

**Blank (2002277-BLK1)**

Prepared & Analyzed: 02/26/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2002277-BS1)**

Prepared & Analyzed: 02/26/20

C10-C28 (DRO) 551 50 mg/kg 500 110 70-130

**Matrix Spike (2002277-MS1)**

Source: 2002259-01

Prepared: 02/26/20 Analyzed: 02/27/20

C10-C28 (DRO) 557 50 mg/kg 500 18.1 108 70-130

**Matrix Spike Dup (2002277-MSD1)**

Source: 2002259-01

Prepared: 02/26/20 Analyzed: 02/27/20

C10-C28 (DRO) 581 50 mg/kg 500 18.1 113 70-130 4.21 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/23/20 14:51

### 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

February 28, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2002279

Enclosed are the results of analyses for samples received by Summit Scientific on 02/27/20 18:12. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
02/28/20 06:32

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S12@22'	2002279-01	Soil	02/27/20 12:47	02/27/20 18:12
S13@8'	2002279-02	Soil	02/27/20 13:21	02/27/20 18:12
S14@14'	2002279-03	Soil	02/27/20 13:24	02/27/20 18:12

Summit Scientific

*The results in 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

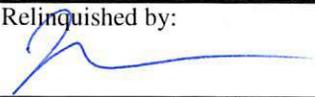
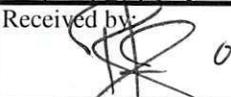
2002279

741 Corporate Circle Suite I ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: PDC  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: Jake McCarver

Project Manager: Mark Longhurst  
E-Mail: Mark.Longhurst@pdce.com  
Project Name: Cecil K 35-29,30; Schwab 26-12F, 13F  
Project Number: \_\_\_\_\_

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions					
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)														
S12 @ 22'	2/27/20	1247	1			X			X				BTEX N												
S13 @ 8'	↓	1321	↓			↓			↓				X												
S14 @ 14'	↓	1324	↓			↓			↓				X												
Relinquished by:  Date/Time: <u>2/27/20</u> <u>2:40 pm / 800</u>				Received by:  Date/Time: <u>02/27/2020</u> <u>1800</u>				Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 Hours <input type="checkbox"/>																	
Relinquished by: _____ Date/Time: _____				Received by: _____ Date/Time: _____				Sample Integrity: Temperature Upon Receipt: <u>S.9</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																	
Relinquished by: _____ Date/Time: _____				Received in Lab by: _____ Date/Time: _____																					

**Sample Receipt Checklist**

S2 Work Order 2002279

Client: PDC Client Project ID: CECIL K 35 - 29, 30 ;

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: SCHWAB 26 -1

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

Temp (°C)	5.9
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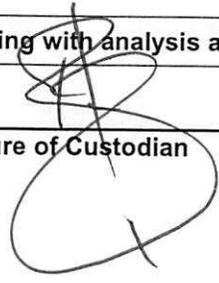
Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

2/27/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/28/20 06:32

**S12@22'**  
**2002279-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/27/20 12:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2002300	02/27/20	02/27/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/27/20 12:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		97.4 %		23-173	"	"	"	"	
Surrogate: Toluene-d8		96.5 %		20-170	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		21-167	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/27/20 12:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2002299	02/27/20	02/27/20	EPA 8015M	

Date Sampled: **02/27/20 12:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		105 %		30-150	"	"	"	"	

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/28/20 06:32

**S13@8'**  
**2002279-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/27/20 13:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2002300	02/27/20	02/27/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/27/20 13:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		94.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/27/20 13:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2002299	02/27/20	02/27/20	EPA 8015M	

Date Sampled: **02/27/20 13:21**

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

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/28/20 06:32

**S14@14'**  
**2002279-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/27/20 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2002300	02/27/20	02/27/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/27/20 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/27/20 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2002299	02/27/20	02/27/20	EPA 8015M	

Date Sampled: **02/27/20 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/28/20 06:32

### 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 2002300 - EPA 5030 Soil MS

##### Blank (2002300-BLK1)

Prepared: 02/27/20 Analyzed: 02/28/20

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Naphthalene	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0461		"	0.0400		115	23-173				
Surrogate: Toluene-d8	0.0391		"	0.0400		97.6	20-170				
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	21-167				

##### LCS (2002300-BS1)

Prepared: 02/27/20 Analyzed: 02/28/20

Benzene	0.112	0.0020	mg/kg	0.100		112	70-130				
Toluene	0.119	0.0050	"	0.100		119	70-130				
Ethylbenzene	0.119	0.0050	"	0.100		119	70-130				
m,p-Xylene	0.211	0.010	"	0.200		105	70-130				
o-Xylene	0.111	0.0050	"	0.100		111	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0487		"	0.0400		122	23-173				
Surrogate: Toluene-d8	0.0421		"	0.0400		105	20-170				
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.5	21-167				

##### Matrix Spike (2002300-MS1)

Source: 2002279-01

Prepared: 02/27/20 Analyzed: 02/28/20

Benzene	0.0939	0.0020	mg/kg	0.100	ND	93.9	70-130				
Toluene	0.103	0.0050	"	0.100	ND	103	70-130				
Ethylbenzene	0.114	0.0050	"	0.100	ND	114	70-130				
m,p-Xylene	0.234	0.010	"	0.200	ND	117	70-130				
o-Xylene	0.0956	0.0050	"	0.100	ND	95.6	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.6	23-173				
Surrogate: Toluene-d8	0.0419		"	0.0400		105	20-170				
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400		93.6	21-167				

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 02/28/20 06:32

**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 2002300 - EPA 5030 Soil MS**

**Matrix Spike Dup (2002300-MSD1)**

Source: 2002279-01

Prepared: 02/27/20 Analyzed: 02/28/20

Benzene	0.0960	0.0020	mg/kg	0.100	ND	96.0	70-130	2.24	30
Toluene	0.101	0.0050	"	0.100	ND	101	70-130	2.06	30
Ethylbenzene	0.114	0.0050	"	0.100	ND	114	70-130	0.580	30
m,p-Xylene	0.233	0.010	"	0.200	ND	116	70-130	0.553	30
o-Xylene	0.0945	0.0050	"	0.100	ND	94.5	70-130	1.07	30
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0400		100	23-173		
Surrogate: Toluene-d8	0.0379		"	0.0400		94.6	20-170		
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 02/28/20 06:32

**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 2002299 - EPA 3550A**

**Blank (2002299-BLK1)**

Prepared: 02/27/20 Analyzed: 02/28/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2002299-BS1)**

Prepared: 02/27/20 Analyzed: 02/28/20

C10-C28 (DRO) 506 50 mg/kg 501 101 70-130

**Matrix Spike (2002299-MS1)**

Source: 2002279-01

Prepared: 02/27/20 Analyzed: 02/28/20

C10-C28 (DRO) 481 50 mg/kg 501 18.8 92.3 70-130

**Matrix Spike Dup (2002299-MSD1)**

Source: 2002279-01

Prepared: 02/27/20 Analyzed: 02/28/20

C10-C28 (DRO) 499 50 mg/kg 501 18.8 95.9 70-130 3.65 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
02/28/20 06:32

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 02, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2002297

Enclosed are the results of analyses for samples received by Summit Scientific on 02/28/20 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**

03/02/20 06:54

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S15@8'	2002297-01	Soil	02/28/20 12:51	02/28/20 17:30
S16@14'	2002297-02	Soil	02/28/20 12:54	02/28/20 17:30
S17@22'	2002297-03	Soil	02/28/20 12:57	02/28/20 17:30

Summit Scientific

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



### Sample Receipt Checklist

S2 Work Order 2002297

Client: PDC Client Project ID: Cecil & 35-29, 30; 26-12 F, 13F Schwab

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

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

Temp (°C)	3.8
-----------	-----

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

\_\_\_\_\_  
Custodian Printed Name or Initials

\_\_\_\_\_  
Signature of Custodian

02/28/2020  
Date/Time 180Z



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/02/20 06:54

**S15@8'**  
**2002297-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/20 12:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2002316	02/28/20	02/28/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/28/20 12:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/20 12:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2002315	"	02/28/20	EPA 8015M	

Date Sampled: **02/28/20 12:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		96.1 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/02/20 06:54

**S16@14'**  
**2002297-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/20 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2002316	02/28/20	02/28/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.30</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2.2</b>	0.10	"	10	"	"	"	"	
<b>Naphthalene</b>	<b>0.057</b>	0.010	"	1	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>70</b>	5.0	"	10	"	"	"	"	

Date Sampled: **02/28/20 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		142 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/20 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>130</b>	50	mg/kg	1	2002315	"	02/28/20	EPA 8015M	

Date Sampled: **02/28/20 12:54**

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

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/02/20 06:54

**S17@22'**  
**2002297-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/20 12:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.032</b>	0.0020	mg/kg	1	2002316	02/28/20	02/28/20	EPA 8260B	
<b>Toluene</b>	<b>0.013</b>	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.27</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.31</b>	0.010	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.028</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>110</b>	5.0	"	10	"	"	"	"	

Date Sampled: **02/28/20 12:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		155 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		106 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		124 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/20 12:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>200</b>	50	mg/kg	1	2002315	"	02/28/20	EPA 8015M	

Date Sampled: **02/28/20 12:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/02/20 06:54

**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 2002316 - EPA 5030 Soil MS**

**Blank (2002316-BLK1)**

Prepared & Analyzed: 02/28/20

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Naphthalene	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104		23-173			
Surrogate: Toluene-d8	0.0421		"	0.0400		105		20-170			
Surrogate: 4-Bromofluorobenzene	0.0434		"	0.0400		109		21-167			

**LCS (2002316-BS1)**

Prepared & Analyzed: 02/28/20

Benzene	0.126	0.0020	mg/kg	0.100		126		70-130			
Toluene	0.125	0.0050	"	0.100		125		70-130			
Ethylbenzene	0.0983	0.0050	"	0.100		98.3		70-130			
m,p-Xylene	0.190	0.010	"	0.200		94.8		70-130			
o-Xylene	0.0959	0.0050	"	0.100		95.9		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104		23-173			
Surrogate: Toluene-d8	0.0428		"	0.0400		107		20-170			
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107		21-167			

**Matrix Spike (2002316-MS1)**

Source: 2002296-05

Prepared & Analyzed: 02/28/20

Benzene	0.125	0.0020	mg/kg	0.100	ND	125		70-130			
Toluene	0.124	0.0050	"	0.100	ND	124		70-130			
Ethylbenzene	0.0971	0.0050	"	0.100	ND	97.1		70-130			
m,p-Xylene	0.186	0.010	"	0.200	ND	93.0		70-130			
o-Xylene	0.0948	0.0050	"	0.100	ND	94.8		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0434		"	0.0400		108		23-173			
Surrogate: Toluene-d8	0.0425		"	0.0400		106		20-170			
Surrogate: 4-Bromofluorobenzene	0.0432		"	0.0400		108		21-167			

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/02/20 06:54

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch 2002316 - EPA 5030 Soil MS**

**Matrix Spike Dup (2002316-MSD1)**

Source: 2002296-05

Prepared & Analyzed: 02/28/20

Benzene	0.128	0.0020	mg/kg	0.100	ND	128	70-130	2.37	30	
Toluene	0.128	0.0050	"	0.100	ND	128	70-130	2.81	30	
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	3.34	30	
m,p-Xylene	0.194	0.010	"	0.200	ND	97.2	70-130	4.32	30	
o-Xylene	0.0976	0.0050	"	0.100	ND	97.6	70-130	2.99	30	
Surrogate: 1,2-Dichloroethane-d4	0.0430		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0426		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0422		"	0.0400		105	21-167			

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/02/20 06:54

**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 2002315 - EPA 3550A**

**Blank (2002315-BLK1)**

Prepared & Analyzed: 02/28/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2002315-BS1)**

Prepared & Analyzed: 02/28/20

C10-C28 (DRO) 625 50 mg/kg 500 125 70-130

**Matrix Spike (2002315-MS1)**

Source: 2002296-05

Prepared & Analyzed: 02/28/20

C10-C28 (DRO) 492 50 mg/kg 500 14.0 95.6 70-130

**Matrix Spike Dup (2002315-MSD1)**

Source: 2002296-05

Prepared & Analyzed: 02/28/20

C10-C28 (DRO) 518 50 mg/kg 500 14.0 101 70-130 5.14 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/02/20 06:54

### 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

March 04, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2003014

Enclosed are the results of analyses for samples received by Summit Scientific on 03/03/20 17:26. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/04/20 06:31

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S18@22'	2003014-01	Soil	03/03/20 09:35	03/03/20 17:26
S19@14'	2003014-02	Soil	03/03/20 09:52	03/03/20 17:26
S20@8'	2003014-03	Soil	03/03/20 09:54	03/03/20 17:26

Summit Scientific

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

# Summit Scientific

S<sub>2</sub>

2003014

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

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name: Cecil K 35-29,30; Schwab 26-12F, 13F  
Sampler Name: Cody Gessell Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH / EC	
1	518 @ 22'	3/3/20	0935	1			X			X			X	X			
2	519 @ 14'	↓	0952	1			↓			↓			↓	↓			
3	520 @ 8'	↓	0954	1			↓			↓			↓	↓			
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <i>Cody Gessell</i>	Date/Time: 3/3/20 1526	Received by: Tasman's Lock Box	Date/Time: 3/3/20 1526	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: <u>2.7</u> Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 03/03/2020 1730	Received by: <i>[Signature]</i>	Date/Time: 03/03/2020 1730		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 2003014

Client: PDC / TASMAN Client Project ID: CECIL K 35-29 ;

Shipped Via:  H.D./P.U./FedEx/UPS/USPS/Other  Airbill #: SCHWAB 26-12F, 13F

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

Temp (°C)	2.7
-----------	-----

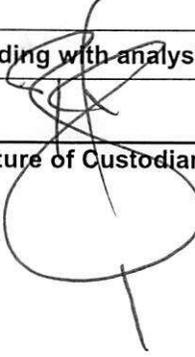
Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

3/3/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/04/20 06:31

**S18@22'**  
**2003014-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/03/20 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003028	03/03/20	03/03/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/03/20 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/20 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003029	"	03/03/20	EPA 8015M	

Date Sampled: **03/03/20 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		93.0 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/04/20 06:31

**S19@14'**  
**2003014-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/03/20 09:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003028	03/03/20	03/03/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/03/20 09:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		96.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/20 09:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003029	"	03/03/20	EPA 8015M	

Date Sampled: **03/03/20 09:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		96.0 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/04/20 06:31

**S20@8'**  
**2003014-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/03/20 09:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003028	03/03/20	03/03/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/03/20 09:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/20 09:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003029	"	03/03/20	EPA 8015M	

Date Sampled: **03/03/20 09:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		99.2 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/04/20 06:31

**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 2003028 - EPA 5030 Soil MS**

**Blank (2003028-BLK1)**

Prepared: 03/03/20 Analyzed: 03/04/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.5	23-173			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0419		"	0.0400		105	21-167			

**LCS (2003028-BS1)**

Prepared: 03/03/20 Analyzed: 03/04/20

Benzene	0.0865	0.0020	mg/kg	0.100		86.5	70-130			
Toluene	0.0922	0.0050	"	0.100		92.2	70-130			
Ethylbenzene	0.0794	0.0050	"	0.100		79.4	70-130			
m,p-Xylene	0.162	0.010	"	0.200		80.8	70-130			
o-Xylene	0.0786	0.0050	"	0.100		78.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0430		"	0.0400		108	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167			

**Matrix Spike (2003028-MS1)**

Source: 2003012-01

Prepared: 03/03/20 Analyzed: 03/04/20

Benzene	0.0916	0.0020	mg/kg	0.100	ND	91.6	70-130			
Toluene	0.0905	0.0050	"	0.100	ND	90.5	70-130			
Ethylbenzene	0.0872	0.0050	"	0.100	ND	87.2	70-130			
m,p-Xylene	0.173	0.010	"	0.200	ND	86.3	70-130			
o-Xylene	0.0838	0.0050	"	0.100	ND	83.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	21-167			

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/04/20 06:31

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch 2003028 - EPA 5030 Soil MS**

**Matrix Spike Dup (2003028-MSD1)**

Source: 2003012-01

Prepared: 03/03/20 Analyzed: 03/04/20

Benzene	0.0956	0.0020	mg/kg	0.100	ND	95.6	70-130	4.17	30	
Toluene	0.0939	0.0050	"	0.100	ND	93.9	70-130	3.64	30	
Ethylbenzene	0.0890	0.0050	"	0.100	ND	89.0	70-130	1.98	30	
m,p-Xylene	0.172	0.010	"	0.200	ND	86.2	70-130	0.104	30	
o-Xylene	0.0837	0.0050	"	0.100	ND	83.7	70-130	0.107	30	
Surrogate: 1,2-Dichloroethane-d4	0.0426		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.2	21-167			

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/04/20 06:31

**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 2003029 - EPA 3550A**

**Blank (2003029-BLK1)**

Prepared & Analyzed: 03/03/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2003029-BS1)**

Prepared & Analyzed: 03/03/20

C10-C28 (DRO) 595 50 mg/kg 500 119 70-130

**Matrix Spike (2003029-MS1)**

Source: 2003012-01

Prepared & Analyzed: 03/03/20

C10-C28 (DRO) 490 50 mg/kg 500 14.5 95.0 70-130

**Matrix Spike Dup (2003029-MSD1)**

Source: 2003012-01

Prepared: 03/03/20 Analyzed: 03/04/20

C10-C28 (DRO) 541 50 mg/kg 500 14.5 105 70-130 9.97 20

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/04/20 06:31

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 05, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2003028

Enclosed are the results of analyses for samples received by Summit Scientific on 03/04/20 17:57. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**

03/05/20 06:19

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S21@8'	2003028-01	Soil	03/04/20 12:57	03/04/20 17:57
S22@14'	2003028-02	Soil	03/04/20 13:00	03/04/20 17:57
S23@22'	2003028-03	Soil	03/04/20 12:55	03/04/20 17:57

Summit Scientific

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

2003028

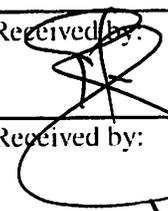
# Summit Scientific

S<sub>2</sub>

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

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name: Cecil K 35-29, 30; Schwab 26-12F, 13F  
Sampler Name: Cody Gessell 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	8260 BTEX	8260B GBTEXN	8015 DRO	pH/EC	
1	S 21 @ 8'	3/4/20	1257	1			X			X			X	X			
2	S 22 @ 14'	↓	1300	1			↓			↓			↓	↓			
3	S 23 @ 22'	↓	1255	1			↓			↓			↓	↓			
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Relinquished by: Cody Gessell		Date/Time: 3/4/20 1506		Received by: Tasman's Lock Box		Date/Time: 3/4/20 1506		Turn Around Time (Check)				Notes:					
Relinquished by: Tasman's Lock Box		Date/Time: 03/04/2020 1800		Received by: 		Date/Time: 03/04/2020 1800		Same Day <input checked="" type="checkbox"/> 72 hours				7.7					
Relinquished by:		Date/Time:		Received by:		Date/Time:		24 hours				Standard					
								48 hours				Sample Integrity: 7.7					
								Temperature Upon Receipt:				Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					

**Sample Receipt Checklist**

S2 Work Order 2003028

Client: PDC Client Project ID: cecil 15 35, 29, 30; Schwab 2.0

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

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

Temp (°C)	<u>7.9</u>
-----------	------------

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

\_\_\_\_\_  
Custodian Printed Name or Initials

\_\_\_\_\_  
Signature of Custodian

03/04/202  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/05/20 06:19

**S21@8'**  
**2003028-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/04/20 12:57**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003039	03/04/20	03/04/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/04/20 12:57**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		94.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/04/20 12:57**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003037	"	03/04/20	EPA 8015M	

Date Sampled: **03/04/20 12:57**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/05/20 06:19

**S22@14'**  
**2003028-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/04/20 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003039	03/04/20	03/04/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/04/20 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/04/20 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003037	"	03/04/20	EPA 8015M	

Date Sampled: **03/04/20 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		113 %	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/05/20 06:19

**S23@22'**  
**2003028-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/04/20 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003039	03/04/20	03/04/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/04/20 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		95.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/04/20 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003037	"	03/04/20	EPA 8015M	

Date Sampled: **03/04/20 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		113 %	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/05/20 06:19

### 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 2003039 - EPA 5030 Soil MS

##### Blank (2003039-BLK1)

Prepared: 03/04/20 Analyzed: 03/05/20

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Naphthalene	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0400		99.8	23-173				
Surrogate: Toluene-d8	0.0414		"	0.0400		104	20-170				
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167				

##### LCS (2003039-BS1)

Prepared: 03/04/20 Analyzed: 03/05/20

Benzene	0.0967	0.0020	mg/kg	0.100		96.7	70-130				
Toluene	0.0961	0.0050	"	0.100		96.1	70-130				
Ethylbenzene	0.0871	0.0050	"	0.100		87.1	70-130				
m,p-Xylene	0.173	0.010	"	0.200		86.7	70-130				
o-Xylene	0.0845	0.0050	"	0.100		84.5	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400		95.2	23-173				
Surrogate: Toluene-d8	0.0403		"	0.0400		101	20-170				
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.2	21-167				

##### Matrix Spike (2003039-MS1)

Source: 2003025-03

Prepared: 03/04/20 Analyzed: 03/05/20

Benzene	0.0891	0.0020	mg/kg	0.100	ND	89.1	70-130				
Toluene	0.0880	0.0050	"	0.100	ND	88.0	70-130				
Ethylbenzene	0.0829	0.0050	"	0.100	ND	82.9	70-130				
m,p-Xylene	0.161	0.010	"	0.200	ND	80.4	70-130				
o-Xylene	0.0773	0.0050	"	0.100	ND	77.3	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0392		"	0.0400		98.0	23-173				
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170				
Surrogate: 4-Bromofluorobenzene	0.0524		"	0.0400		131	21-167				

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/05/20 06:19

**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 2003039 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (2003039-MSD1)</b>	<b>Source: 2003025-03</b>			<b>Prepared: 03/04/20 Analyzed: 03/05/20</b>						
Benzene	0.110	0.0020	mg/kg	0.100	ND	110	70-130	21.0	30	
Toluene	0.107	0.0050	"	0.100	ND	107	70-130	19.1	30	
Ethylbenzene	0.0955	0.0050	"	0.100	ND	95.5	70-130	14.1	30	
m,p-Xylene	0.183	0.010	"	0.200	ND	91.3	70-130	12.7	30	
o-Xylene	0.0895	0.0050	"	0.100	ND	89.5	70-130	14.6	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0446</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0575</i>		<i>"</i>	<i>0.0400</i>		<i>144</i>	<i>21-167</i>			

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/05/20 06:19

**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 2003037 - EPA 3550A**

**Blank (2003037-BLK1)**

Prepared & Analyzed: 03/04/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2003037-BS1)**

Prepared & Analyzed: 03/04/20

C10-C28 (DRO) 568 50 mg/kg 500 114 70-130

**Matrix Spike (2003037-MS1)**

Source: 2003025-03

Prepared & Analyzed: 03/04/20

C10-C28 (DRO) 636 50 mg/kg 500 ND 127 70-130

**Matrix Spike Dup (2003037-MSD1)**

Source: 2003025-03

Prepared & Analyzed: 03/04/20

C10-C28 (DRO) 608 50 mg/kg 500 ND 122 70-130 4.57 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/05/20 06:19

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 06, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2003055

Enclosed are the results of analyses for samples received by Summit Scientific on 03/05/20 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/06/20 06:10

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S24@22'	2003055-01	Soil	03/05/20 10:20	03/05/20 17:30
S25@8'	2003055-02	Soil	03/05/20 10:45	03/05/20 17:30
S26@14'	2003055-03	Soil	03/05/20 10:48	03/05/20 17:30
S27@22'	2003055-04	Soil	03/05/20 10:51	03/05/20 17:30

Summit Scientific

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

2003055

# Summit Scientific

S<sub>2</sub>

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

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name: Cecil K 35-29,30; Schwab 26-12F,13F  
Sampler Name: Cody Gressell 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	8260 BTEX	8260B GBTEXN	8015 DRO	pH / EC	
1	S24 @ 22'	3/5/20	1020	1			X			X			X	X			
2	S25 @ 8'		1045	1													
3	S26 @ 14'		1048	1													
4	S27 @ 22'		1051	1													
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: Cody Gressell	Date/Time: 3/5/20 1518	Received by: Tasman's Lock Box	Date/Time: 3/5/20 1518	Turn Around Time (Check): Same Day <input checked="" type="checkbox"/> 72 hours ___	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 03/05/2020 1736	Received by:	Date/Time: 03/05/2020 1736	24 hours ___ Standard ___	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours ___	
				Sample Integrity: Temperature Upon Receipt: S.S.	
				Samples Intact: <input checked="" type="checkbox"/> Yes ___ No	

**Sample Receipt Checklist**

S2 Work Order

2003055

Client: PDC / TASMAN

Client Project ID: CECIL 35-29, 30

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

Airbill #: SCHWAB 26-12F, 13F

Matrix (check all that apply):

Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

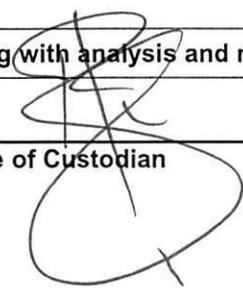
Temp (°C)	5.5
-----------	-----

Thermometer ID: 61857155-K

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

RZ

\_\_\_\_\_  
Custodian Printed Name or Initials

  
\_\_\_\_\_  
Signature of Custodian

3/5/20

\_\_\_\_\_  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/06/20 06:10

**S24@22'**  
**2003055-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/05/20 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	2003067	03/05/20	03/05/20	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.027</b>	0.010		"	"	"	"	"	"	
Naphthalene	ND	0.010		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.70</b>	0.50		"	"	"	"	"	"	

Date Sampled: **03/05/20 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		90.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		119 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/05/20 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	2003068	03/05/20	03/05/20	EPA 8015M	

Date Sampled: **03/05/20 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		99.3 %		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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/06/20 06:10

**S25@8'**  
**2003055-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/05/20 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003067	03/05/20	03/05/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/05/20 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/05/20 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003068	03/05/20	03/05/20	EPA 8015M	

Date Sampled: **03/05/20 10:45**

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

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/06/20 06:10

**S26@14'**  
**2003055-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/05/20 10:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003067	03/05/20	03/05/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/05/20 10:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		94.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/05/20 10:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003068	03/05/20	03/05/20	EPA 8015M	

Date Sampled: **03/05/20 10:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/06/20 06:10

**S27@22'**  
**2003055-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/05/20 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003067	03/05/20	03/05/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/05/20 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		95.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/05/20 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003068	03/05/20	03/05/20	EPA 8015M	

Date Sampled: **03/05/20 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/06/20 06:10

### 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 2003067 - EPA 5030 Soil MS

##### Blank (2003067-BLK1)

Prepared: 03/05/20 Analyzed: 03/06/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0368		"	0.0400		92.1	23-173			
Surrogate: Toluene-d8	0.0452		"	0.0400		113	20-170			
Surrogate: 4-Bromofluorobenzene	0.0452		"	0.0400		113	21-167			

##### LCS (2003067-BS1)

Prepared: 03/05/20 Analyzed: 03/06/20

Benzene	0.114	0.0020	mg/kg	0.100		114	70-130			
Toluene	0.118	0.0050	"	0.100		118	70-130			
Ethylbenzene	0.0807	0.0050	"	0.100		80.7	70-130			
m,p-Xylene	0.155	0.010	"	0.200		77.5	70-130			
o-Xylene	0.0754	0.0050	"	0.100		75.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0365		"	0.0400		91.4	23-173			
Surrogate: Toluene-d8	0.0452		"	0.0400		113	20-170			
Surrogate: 4-Bromofluorobenzene	0.0445		"	0.0400		111	21-167			

##### Matrix Spike (2003067-MS1)

Source: 2003054-01

Prepared: 03/05/20 Analyzed: 03/06/20

Benzene	0.116	0.0020	mg/kg	0.100	ND	116	70-130			
Toluene	0.121	0.0050	"	0.100	ND	121	70-130			
Ethylbenzene	0.0817	0.0050	"	0.100	ND	81.7	70-130			
m,p-Xylene	0.158	0.010	"	0.200	ND	79.2	70-130			
o-Xylene	0.0763	0.0050	"	0.100	ND	76.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0375		"	0.0400		93.8	23-173			
Surrogate: Toluene-d8	0.0445		"	0.0400		111	20-170			
Surrogate: 4-Bromofluorobenzene	0.0446		"	0.0400		112	21-167			

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/06/20 06:10

**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 2003067 - EPA 5030 Soil MS**

**Matrix Spike Dup (2003067-MSD1)**

Source: 2003054-01

Prepared: 03/05/20 Analyzed: 03/06/20

Benzene	0.108	0.0020	mg/kg	0.100	ND	108	70-130	7.83	30	
Toluene	0.118	0.0050	"	0.100	ND	118	70-130	2.67	30	
Ethylbenzene	0.0878	0.0050	"	0.100	ND	87.8	70-130	7.26	30	
m,p-Xylene	0.171	0.010	"	0.200	ND	85.7	70-130	7.88	30	
o-Xylene	0.0792	0.0050	"	0.100	ND	79.2	70-130	3.74	30	
Surrogate: 1,2-Dichloroethane-d4	0.0365		"	0.0400		91.3	23-173			
Surrogate: Toluene-d8	0.0428		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	21-167			

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/06/20 06:10

**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 2003068 - EPA 3550A**

**Blank (2003068-BLK1)**

Prepared: 03/05/20 Analyzed: 03/06/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2003068-BS1)**

Prepared: 03/05/20 Analyzed: 03/06/20

C10-C28 (DRO) 571 50 mg/kg 500 114 70-130

**Matrix Spike (2003068-MS1)**

**Source: 2003054-01**

Prepared: 03/05/20 Analyzed: 03/06/20

C10-C28 (DRO) 549 50 mg/kg 500 16.1 107 70-130

**Matrix Spike Dup (2003068-MSD1)**

**Source: 2003054-01**

Prepared: 03/05/20 Analyzed: 03/06/20

C10-C28 (DRO) 575 50 mg/kg 500 16.1 112 70-130 4.61 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/06/20 06:10

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 09, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2003076

Enclosed are the results of analyses for samples received by Summit Scientific on 03/06/20 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/09/20 06:51

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S28@8'	2003076-01	Soil	03/06/20 14:05	03/06/20 17:30
S29@14'	2003076-02	Soil	03/06/20 14:08	03/06/20 17:30
S30@22'	2003076-03	Soil	03/06/20 12:50	03/06/20 17:30

Summit Scientific

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

2003076

# Summit Scientific

S<sub>2</sub>

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

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name: Cecil K 35-24, 30; Schwab 26-12F, 13F  
Sampler Name: Cody Gessell Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions	
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH/EC		
1	S28 @ 8'	3/6/20	1405	1			X			X				X	X			
2	S29 @ 14'	3/6/20	1408	1										1	1			
3	S30 @ 22'	3/6/20	1250	1														
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: Cody Gessell	Date/Time: 3/6/20 1530	Received by: Tasman's Lock Box	Date/Time: 3/6/20 1530	Turn Around Time (Check): Same Day <input checked="" type="checkbox"/> 72 hours ___	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 03/06/20 1730	Received by:	Date/Time: 03/06/2020 1730	24 hours ___ Standard ___	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours ___	
				Sample Integrity: Temperature Upon Receipt: 4.5	
				Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

**Sample Receipt Checklist**

S2 Work Order 2003076

SCHWAB

Client: PDC/Herman Client Project ID: Cecil K 35-24, 30, 26-12F, 13F

Shipped Via: (P.U.) FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_

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

Temp (°C)	4.5
-----------	-----

Thermometer ID: 61857155-K

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

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

Custodian Printed Name or Initials  
[Signature]

Signature of Custodian  
[Signature]

03/06/2020  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/09/20 06:51

**S28@8'**  
**2003076-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/06/20 14:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003088	03/06/20	03/06/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/06/20 14:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/06/20 14:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003087	"	03/06/20	EPA 8015M	

Date Sampled: **03/06/20 14:05**

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

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/09/20 06:51

**S29@14'**  
**2003076-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/06/20 14:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003088	03/06/20	03/06/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/06/20 14:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/06/20 14:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003087	"	03/06/20	EPA 8015M	

Date Sampled: **03/06/20 14:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/09/20 06:51

**S30@22'**  
**2003076-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/06/20 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	2003088	03/06/20	03/06/20	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.032</b>	0.010		"	"	"	"	"	"	
Naphthalene	ND	0.010		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.58</b>	0.50		"	"	"	"	"	"	

Date Sampled: **03/06/20 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		97.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/06/20 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	2003087	"	03/07/20	EPA 8015M	

Date Sampled: **03/06/20 12:50**

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

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/09/20 06:51

### 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 2003088 - EPA 5030 Soil MS

##### Blank (2003088-BLK1)

Prepared & Analyzed: 03/06/20

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Naphthalene	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0370		"	0.0400		92.6	23-173				
Surrogate: Toluene-d8	0.0418		"	0.0400		105	20-170				
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167				

##### LCS (2003088-BS1)

Prepared & Analyzed: 03/06/20

Benzene	0.106	0.0020	mg/kg	0.100		106	70-130				
Toluene	0.105	0.0050	"	0.100		105	70-130				
Ethylbenzene	0.0878	0.0050	"	0.100		87.8	70-130				
m,p-Xylene	0.175	0.010	"	0.200		87.3	70-130				
o-Xylene	0.0849	0.0050	"	0.100		84.9	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0383		"	0.0400		95.8	23-173				
Surrogate: Toluene-d8	0.0418		"	0.0400		104	20-170				
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167				

##### Matrix Spike (2003088-MS1)

Source: 2003075-01

Prepared & Analyzed: 03/06/20

Benzene	0.113	0.0020	mg/kg	0.100	ND	113	70-130				
Toluene	0.112	0.0050	"	0.100	ND	112	70-130				
Ethylbenzene	0.0911	0.0050	"	0.100	ND	91.1	70-130				
m,p-Xylene	0.179	0.010	"	0.200	0.00378	87.6	70-130				
o-Xylene	0.0859	0.0050	"	0.100	ND	85.9	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		97.0	23-173				
Surrogate: Toluene-d8	0.0423		"	0.0400		106	20-170				
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.6	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/09/20 06:51

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

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

**Batch 2003088 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (2003088-MSD1)</b>	<b>Source: 2003075-01</b>			<b>Prepared &amp; Analyzed: 03/06/20</b>						
Benzene	0.106	0.0020	mg/kg	0.100	ND	106	70-130	6.39	30	
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	7.56	30	
Ethylbenzene	0.0898	0.0050	"	0.100	ND	89.8	70-130	1.46	30	
m,p-Xylene	0.178	0.010	"	0.200	0.00378	87.0	70-130	0.740	30	
o-Xylene	0.0867	0.0050	"	0.100	ND	86.7	70-130	0.938	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>94.1</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0415</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0419</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>21-167</i>			

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/09/20 06:51

**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 2003087 - EPA 3550A**

**Blank (2003087-BLK1)**

Prepared & Analyzed: 03/06/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2003087-BS1)**

Prepared & Analyzed: 03/06/20

C10-C28 (DRO) 632 50 mg/kg 500 126 70-130

**Matrix Spike (2003087-MS1)**

Source: 2003075-01

Prepared & Analyzed: 03/06/20

C10-C28 (DRO) 627 50 mg/kg 500 16.8 122 70-130

**Matrix Spike Dup (2003087-MSD1)**

Source: 2003075-01

Prepared & Analyzed: 03/06/20

C10-C28 (DRO) 651 50 mg/kg 500 16.8 127 70-130 3.77 20

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/09/20 06:51

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 10, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2003085

Enclosed are the results of analyses for samples received by Summit Scientific on 03/09/20 18:00. 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, stylized initial 'M'.

Muri Premer For Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/10/20 10:50

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S31@8'	2003085-01	Soil	03/09/20 13:30	03/09/20 18:00
S32@14'	2003085-02	Soil	03/09/20 13:45	03/09/20 18:00
S33@22'	2003085-03	Soil	03/09/20 13:48	03/09/20 18:00

Summit Scientific

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

# Summit Scientific

2003085

4653 Table Mountain Drive ♦ Golden, Colorado 80402  
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name: Cecil K 35-29,30; Schwab 26-12F,13F  
Sampler Name: Cody Gessell 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	8260 BTEX	8260B GBTEXN	8015 DRO	
1	S31 @ 8'	3/09/20	1330	1			X			X			X	X		
2	S32 @ 14'	↓	1345	1			↓						↓	↓		
3	S33 @ 22'	↓	1348	1			↓						↓	↓		
4																
5																
6																
7																
8																
9																
10																

Relinquished by: <i>Cody Gessell</i>	Date/Time: 3/09/20 1520	Received by: Tasman's Lock Box	Date/Time: 3/09/20 1520	<b>Turn Around Time</b> (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ <b>Sample Integrity:</b> Temperature Upon Receipt: <u>38</u> Samples Intact: <input checked="" type="checkbox"/> Yes No	<b>Notes:</b>
Relinquished by: Tasman's Lock Box	Date/Time: 03/09/2020 1830	Received by: <i>[Signature]</i>	Date/Time: 03/09/2020 1830		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 200308S

Client: PDC / TASMAN Client Project ID: CECIL K 35 - 29, 30

Shipped Via:  H.D./P.U./FedEx/UPS/USPS/Other  Airbill #: SCHWAB 26-12F, 13F

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

Temp (°C)	3.8
-----------	-----

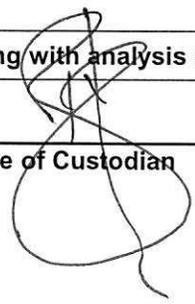
Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

3/9/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/10/20 10:50

**S31@8'**  
**2003085-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/09/20 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	2003102	03/09/20	03/09/20	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.011</b>	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.10</b>	0.010		"	"	"	"	"	"	
Naphthalene	ND	0.010		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.1</b>	0.50		"	"	"	"	"	"	

Date Sampled: **03/09/20 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		98.1 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/09/20 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	2003103	03/09/20	03/09/20	EPA 8015M	

Date Sampled: **03/09/20 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		99.4 %		30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/10/20 10:50

**S32@14'**  
**2003085-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/09/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003102	03/09/20	03/09/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.019</b>	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.80</b>	0.50	"	"	"	"	"	"	

Date Sampled: **03/09/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		93.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/09/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003103	03/09/20	03/09/20	EPA 8015M	

Date Sampled: **03/09/20 13:45**

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

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/10/20 10:50

**S33@22'**  
**2003085-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/09/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003102	03/09/20	03/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.0051</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.049</b>	0.010	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.018</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>34</b>	0.50	"	"	"	"	"	"	

Date Sampled: **03/09/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		133 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/09/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003103	03/09/20	03/09/20	EPA 8015M	

Date Sampled: **03/09/20 13:48**

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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/10/20 10:50

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch 2003102 - EPA 5030 Soil MS**

**Blank (2003102-BLK1)**

Prepared: 03/09/20 Analyzed: 03/10/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0400		100	23-173			
Surrogate: Toluene-d8	0.0418		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107	21-167			

**LCS (2003102-BS1)**

Prepared: 03/09/20 Analyzed: 03/10/20

Benzene	0.0946	0.0020	mg/kg	0.100		94.6	70-130			
Toluene	0.0969	0.0050	"	0.100		96.9	70-130			
Ethylbenzene	0.0811	0.0050	"	0.100		81.1	70-130			
m,p-Xylene	0.161	0.010	"	0.200		80.6	70-130			
o-Xylene	0.0736	0.0050	"	0.100		73.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0380		"	0.0400		95.0	23-173			
Surrogate: Toluene-d8	0.0423		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	21-167			

**Matrix Spike (2003102-MS1)**

Source: 2003084-01

Prepared: 03/09/20 Analyzed: 03/10/20

Benzene	0.211	0.0020	mg/kg	0.100	0.180	31.3	70-130			QM-07
Toluene	0.0918	0.0050	"	0.100	ND	91.8	70-130			
Ethylbenzene	1.33	0.0050	"	0.100	5.62	NR	70-130			E, QM-07
m,p-Xylene	6.47	0.010	"	0.200	27.8	NR	70-130			E, QM-07
o-Xylene	0.0948	0.0050	"	0.100	0.0600	34.8	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0503		"	0.0400		126	23-173			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.159		"	0.0400		397	21-167			S-02

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/10/20 10:50

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

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

**Batch 2003102 - EPA 5030 Soil MS**

Matrix Spike Dup (2003102-MSD1)	Source: 2003084-01			Prepared: 03/09/20 Analyzed: 03/10/20						
Benzene	0.215	0.0020	mg/kg	0.100	0.180	35.2	70-130	1.86	30	QM-07
Toluene	0.0954	0.0050	"	0.100	ND	95.4	70-130	3.81	30	
Ethylbenzene	1.37	0.0050	"	0.100	5.62	NR	70-130	3.12	30	E, QM-07
m,p-Xylene	6.21	0.010	"	0.200	27.8	NR	70-130	4.12	30	E, QM-07
o-Xylene	0.0898	0.0050	"	0.100	0.0600	29.8	70-130	5.39	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0541		"	0.0400		135	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.163		"	0.0400		407	21-167			S-02

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/10/20 10:50

**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 2003103 - EPA 3550A**

**Blank (2003103-BLK1)**

Prepared: 03/09/20 Analyzed: 03/10/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2003103-BS1)**

Prepared: 03/09/20 Analyzed: 03/10/20

C10-C28 (DRO) 538 50 mg/kg 500 108 70-130

**Matrix Spike (2003103-MS1)**

**Source: 2003084-01**

Prepared: 03/09/20 Analyzed: 03/10/20

C10-C28 (DRO) 7220 50 mg/kg 500 6650 115 70-130

**Matrix Spike Dup (2003103-MSD1)**

**Source: 2003084-01**

Prepared: 03/09/20 Analyzed: 03/10/20

C10-C28 (DRO) 7140 50 mg/kg 500 6650 98.4 70-130 1.15 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/10/20 10:50

### 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.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 11, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2003106

Enclosed are the results of analyses for samples received by Summit Scientific on 03/10/20 17:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/11/20 06:45

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S34@8'	2003106-01	Soil	03/10/20 10:27	03/10/20 17:38
S35@14'	2003106-02	Soil	03/10/20 10:30	03/10/20 17:38
S36@22'	2003106-03	Soil	03/10/20 10:36	03/10/20 17:38
S37@8'	2003106-04	Soil	03/10/20 11:10	03/10/20 17:38
S38@14'	2003106-05	Soil	03/10/20 11:13	03/10/20 17:38

Summit Scientific

*The results in 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

2003106

4653 Table Mountain Drive ♦ Golden, Colorado 80402  
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name: Cecil K, 35-29, 30; Schwab 26-12F, 13F  
Sampler Name: Cody Gessell 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	\$260 BTEX	\$260B GBTEXN	\$015 DRO	pH/EC	
1	S34 @ 8'	3/10/20	1027	1			X			X			X	X			
2	S35 @ 14'	↓	1030	↓			↓			↓			↓	↓			
3	S36 @ 22'	↓	1036	↓			↓			↓			↓	↓			
4	S37 @ 8'	↓	1110	↓			↓			↓			↓	↓			
5	S38 @ 14'	↓	1113	↓			↓			↓			↓	↓			
6																	
7																	
8																	
9																	
10																	

Relinquished by: Cody Gessell	Date/Time: 3/10/20 1515	Received by: Tasman's Lock Box	Date/Time: 3/10/20 1515	<b>Turn Around Time</b> (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ <b>Sample Integrity:</b> Temperature Upon Receipt: 5.5 Samples Intact: <input checked="" type="checkbox"/> Yes No	<b>Notes:</b>
Relinquished by: Tasman's Lock Box	Date/Time: 03/10/2020 1730	Received by: 	Date/Time: 03/10/2020 1730		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 2003106

Client: PDC / TASMAN Client Project ID: CECIL K 35-29,30

Shipped Via:  H.D./P.U./FedEx/UPS/USPS/Other  Airbill #: SCHWAB 26-12F, 13F

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

Temp (°C)	5.5
-----------	-----

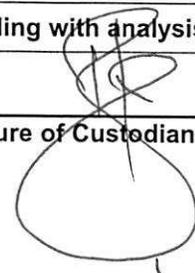
Thermometer ID: 61857155-K

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

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

3/10/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/11/20 06:45

**S34@8'**  
**2003106-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/10/20 10:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003122	03/10/20	03/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/10/20 10:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		95.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/10/20 10:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003121	03/10/20	03/10/20	EPA 8015M	

Date Sampled: **03/10/20 10:27**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/11/20 06:45

**S35@14'**  
**2003106-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/10/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003122	03/10/20	03/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>4.1</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **03/10/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/10/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003121	03/10/20	03/10/20	EPA 8015M	

Date Sampled: **03/10/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.3 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/11/20 06:45

**S36@22'**  
**2003106-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/10/20 10:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003122	03/10/20	03/10/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.2</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **03/10/20 10:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		99.4 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		105 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		111 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/10/20 10:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003121	03/10/20	03/10/20	EPA 8015M	

Date Sampled: **03/10/20 10:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		86.7 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/11/20 06:45

**S37@8'**  
**2003106-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/10/20 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003122	03/10/20	03/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/10/20 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/10/20 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003121	03/10/20	03/10/20	EPA 8015M	

Date Sampled: **03/10/20 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		87.1 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/11/20 06:45

**S38@14'**  
**2003106-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/10/20 11:13**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003122	03/10/20	03/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/10/20 11:13**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		97.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/10/20 11:13**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003121	03/10/20	03/10/20	EPA 8015M	

Date Sampled: **03/10/20 11:13**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		83.7 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/11/20 06:45

**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 2003122 - EPA 5030 Soil MS**

**Blank (2003122-BLK1)**

Prepared & Analyzed: 03/10/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0379		"	0.0400		94.6	23-173			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0422		"	0.0400		106	21-167			

**LCS (2003122-BS1)**

Prepared & Analyzed: 03/10/20

Benzene	0.0911	0.0020	mg/kg	0.100		91.1	70-130			
Toluene	0.0951	0.0050	"	0.100		95.1	70-130			
Ethylbenzene	0.0779	0.0050	"	0.100		77.9	70-130			
m,p-Xylene	0.152	0.010	"	0.200		76.0	70-130			
o-Xylene	0.0704	0.0050	"	0.100		70.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.3	23-173			
Surrogate: Toluene-d8	0.0418		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	21-167			

**Matrix Spike (2003122-MS1)**

Source: 2003102-01

Prepared & Analyzed: 03/10/20

Benzene	0.0909	0.0020	mg/kg	0.100	0.00360	87.3	70-130			
Toluene	0.0940	0.0050	"	0.100	0.00306	91.0	70-130			
Ethylbenzene	0.0785	0.0050	"	0.100	ND	78.5	70-130			
m,p-Xylene	0.154	0.010	"	0.200	0.00459	74.8	70-130			
o-Xylene	0.0713	0.0050	"	0.100	ND	71.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400		95.2	23-173			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/11/20 06:45

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch 2003122 - EPA 5030 Soil MS**

Matrix Spike Dup (2003122-MSD1)	Source: 2003102-01			Prepared & Analyzed: 03/10/20						
Benzene	0.0928	0.0020	mg/kg	0.100	0.00360	89.2	70-130	1.99	30	
Toluene	0.0984	0.0050	"	0.100	0.00306	95.4	70-130	4.55	30	
Ethylbenzene	0.0794	0.0050	"	0.100	ND	79.4	70-130	1.10	30	
m,p-Xylene	0.155	0.010	"	0.200	0.00459	75.3	70-130	0.601	30	
o-Xylene	0.0722	0.0050	"	0.100	ND	72.2	70-130	1.30	30	
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.6	23-173			
Surrogate: Toluene-d8	0.0429		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0419		"	0.0400		105	21-167			

Summit Scientific

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



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/11/20 06:45

**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 2003121 - EPA 3550A**

**Blank (2003121-BLK1)**

Prepared & Analyzed: 03/10/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2003121-BS1)**

Prepared & Analyzed: 03/10/20

C10-C28 (DRO) 591 50 mg/kg 500 118 70-130

**Matrix Spike (2003121-MS1)**

Source: 2003102-01

Prepared & Analyzed: 03/10/20

C10-C28 (DRO) 474 50 mg/kg 500 7.18 93.3 70-130

**Matrix Spike Dup (2003121-MSD1)**

Source: 2003102-01

Prepared & Analyzed: 03/10/20

C10-C28 (DRO) 531 50 mg/kg 500 7.18 105 70-130 11.5 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/11/20 06:45

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 12, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2003119

Enclosed are the results of analyses for samples received by Summit Scientific on 03/11/20 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/12/20 15:20

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S39@8'	2003119-01	Soil	03/11/20 10:33	03/11/20 17:30
S40@14'	2003119-02	Soil	03/11/20 10:50	03/11/20 17:30
S41@22'	2003119-03	Soil	03/11/20 10:53	03/11/20 17:30
S42@8'	2003119-04	Soil	03/11/20 13:20	03/11/20 17:30
S43@14'	2003119-05	Soil	03/11/20 13:30	03/11/20 17:30
S44@22'	2003119-06	Soil	03/11/20 13:33	03/11/20 17:30

Summit Scientific

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

# Summit Scientific

2003119

4653 Table Mountain Drive ♦ Golden, Colorado 80402  
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name: Cecil K 35-29, 30; Schwab 26-12F, 13F  
Sampler Name: Cody Gressell 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	\$260 BTEX	\$260B GBTEXN	\$015 DRO	pH/EC		
1	S39 @ 8'	3/11/20	1033	1			X			X				X	X			
2	S40 @ 14'		1050															
3	S41 @ 22'		1053															
4	S42 @ 8'		1320															
5	S43 @ 14'		1330															
6	S44 @ 22'		1333															
7																		
8																		
9																		
10																		
Relinquished by: Cody Gressell		Date/Time: 3/11/20 1500		Received by: Tasman's Lock Box		Date/Time: 3/11/20 1500		Turn Around Time (Check)				Notes:						
								Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>										
								24 hours <input type="checkbox"/> Standard <input type="checkbox"/>										
								48 hours <input type="checkbox"/>										
Relinquished by: Tasman's Lock Box		Date/Time: 03/11/2020 1730		Received by: [Signature]		Date/Time: 03/11/2020 1730		Sample Integrity:										
								Temperature Upon Receipt: 2.3										
Relinquished by:		Date/Time:		Received by:		Date/Time:		Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No										

### Sample Receipt Checklist

S2 Work Order 2003119

Client: PDC / TASMAN Client Project ID: CECIL K 35 - 29, 30

Shipped Via:  H.D./P.U./FedEx/UPS/USPS/Other  Airbill #: SCHWAB 26 - 12F, 13F

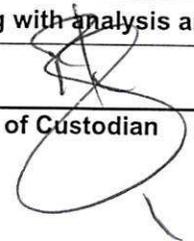
Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Temp (°C)	5.3
-----------	-----

Thermometer ID: 61857155-K

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

3/11/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/12/20 15:20

**S39@8'**  
**2003119-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/11/20 10:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	2003144	03/11/20	03/12/20	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.029</b>	0.010		"	"	"	"	"	"	
Naphthalene	ND	0.010		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>35</b>	0.50		"	"	"	"	"	"	

Date Sampled: **03/11/20 10:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		104 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		68.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		158 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/11/20 10:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	2003146	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 10:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		102 %		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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/12/20 15:20

**S40@14'**  
**2003119-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/11/20 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003144	03/11/20	03/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/20 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		74.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		82.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/11/20 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003146	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.6 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/12/20 15:20

**S41@22'**  
**2003119-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/11/20 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003144	03/11/20	03/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>7.4</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **03/11/20 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		74.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/11/20 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003146	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.7 %	30-150		"	"	"	"	

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/12/20 15:20

**S42@8'**  
**2003119-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/11/20 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003144	03/11/20	03/12/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>27</b>	<b>0.50</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	

Date Sampled: **03/11/20 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		121 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		76.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		161 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/11/20 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003146	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/12/20 15:20

**S43@14'**  
**2003119-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/11/20 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003144	03/11/20	03/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/20 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		76.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.8 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/11/20 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003146	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 13:30**

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

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/12/20 15:20

**S44@22'**  
**2003119-06 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/11/20 13:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003144	03/11/20	03/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/20 13:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		72.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		80.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/11/20 13:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003146	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 13:33**

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

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/12/20 15:20

**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 2003144 - EPA 5030 Soil MS**

**Blank (2003144-BLK1)**

Prepared: 03/11/20 Analyzed: 03/12/20

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Naphthalene	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0572		"	0.0400		143	23-173				
Surrogate: Toluene-d8	0.0305		"	0.0400		76.2	20-170				
Surrogate: 4-Bromofluorobenzene	0.0345		"	0.0400		86.2	21-167				

**LCS (2003144-BS1)**

Prepared: 03/11/20 Analyzed: 03/12/20

Benzene	0.0851	0.0020	mg/kg	0.100		85.1	70-130				
Toluene	0.0822	0.0050	"	0.100		82.2	70-130				
Ethylbenzene	0.0766	0.0050	"	0.100		76.6	70-130				
m,p-Xylene	0.194	0.010	"	0.200		97.1	70-130				
o-Xylene	0.0988	0.0050	"	0.100		98.8	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		96.9	23-173				
Surrogate: Toluene-d8	0.0282		"	0.0400		70.6	20-170				
Surrogate: 4-Bromofluorobenzene	0.0309		"	0.0400		77.3	21-167				

**Matrix Spike (2003144-MS1)**

Source: 2003119-01

Prepared: 03/11/20 Analyzed: 03/12/20

Benzene	0.0863	0.0020	mg/kg	0.100	ND	86.3	70-130				
Toluene	0.0840	0.0050	"	0.100	ND	84.0	70-130				
Ethylbenzene	0.0818	0.0050	"	0.100	ND	81.8	70-130				
m,p-Xylene	0.203	0.010	"	0.200	0.0292	86.7	70-130				
o-Xylene	0.0715	0.0050	"	0.100	ND	71.5	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0382		"	0.0400		95.5	23-173				
Surrogate: Toluene-d8	0.0277		"	0.0400		69.2	20-170				
Surrogate: 4-Bromofluorobenzene	0.0516		"	0.0400		129	21-167				

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/12/20 15:20

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch 2003144 - EPA 5030 Soil MS**

**Matrix Spike Dup (2003144-MSD1)**

Source: 2003119-01

Prepared: 03/11/20 Analyzed: 03/12/20

Benzene	0.0890	0.0020	mg/kg	0.100	ND	89.0	70-130	3.05	30	
Toluene	0.0857	0.0050	"	0.100	ND	85.7	70-130	1.98	30	
Ethylbenzene	0.0853	0.0050	"	0.100	ND	85.3	70-130	4.13	30	
m,p-Xylene	0.206	0.010	"	0.200	0.0292	88.5	70-130	1.75	30	
o-Xylene	0.0755	0.0050	"	0.100	ND	75.5	70-130	5.43	30	
Surrogate: 1,2-Dichloroethane-d4	0.0375		"	0.0400		93.8	23-173			
Surrogate: Toluene-d8	0.0279		"	0.0400		69.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0534		"	0.0400		134	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/12/20 15:20

**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 2003146 - EPA 3550A**

**Blank (2003146-BLK1)**

Prepared: 03/11/20 Analyzed: 03/12/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2003146-BS1)**

Prepared: 03/11/20 Analyzed: 03/12/20

C10-C28 (DRO) 476 50 mg/kg 500 95.2 70-130

**Matrix Spike (2003146-MS1)**

Source: 2003119-01

Prepared: 03/11/20 Analyzed: 03/12/20

C10-C28 (DRO) 475 50 mg/kg 500 20.7 90.8 70-130

**Matrix Spike Dup (2003146-MSD1)**

Source: 2003119-01

Prepared: 03/11/20 Analyzed: 03/12/20

C10-C28 (DRO) 495 50 mg/kg 500 20.7 94.8 70-130 4.04 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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/12/20 15:20

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 16, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2003168

Enclosed are the results of analyses for samples received by Summit Scientific on 03/13/20 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/16/20 06:13

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S45@8'	2003168-01	Soil	03/13/20 09:30	03/13/20 17:00
S46@14'	2003168-02	Soil	03/13/20 09:36	03/13/20 17:00
S47@22'	2003168-03	Soil	03/13/20 09:39	03/13/20 17:00
S48@8'	2003168-04	Soil	03/13/20 09:55	03/13/20 17:00
S49@14'	2003168-05	Soil	03/13/20 09:58	03/13/20 17:00
S50@22'	2003168-06	Soil	03/13/20 10:01	03/13/20 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

2003167

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

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name:  
Sampler Name: Coely Gessell Project Number: Cecil K 35-24, 30; Schwab 26-12F, 13F

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	
1	S45 @ 8'	3/13/20	0930	1			X			X			X	X		
2	S46 @ 14'		0936													
3	S47 @ 22'		0939													
4	S48 @ 8'		0955													
5	S49 @ 14'		0958													
6	S50 @ 22'		1001													
7																
8																
9																
10																

Relinquished by: <u>Coely Gessell</u> Date/Time: <u>3/13/20 1410</u>	Received by: <u>Tasman's Lock Box</u> <u>Alan Dahl</u> Date/Time: <u>3/13/20 1410</u>	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___	Notes:
Relinquished by: <u>Tasman's Lock Box</u> <u>Alan Dahl</u> Date/Time: <u>3/13/20</u>	Received by: <u>Tasman's Lock Box</u> Date/Time: <u>3/13/20</u>	Sample Integrity: Temperature Upon Receipt: <u>4.9</u>	
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: <u>1700 3/13/20</u>	Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

### Sample Receipt Checklist

S2 Work Order 2003168

Client: PDC Client Project ID: Cecil K 35-29,30; Schwab 26-12

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

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

Temp (°C)	4.9
-----------	-----

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

PS

\_\_\_\_\_  
Custodian Printed Name or Initials

\_\_\_\_\_  
Signature of Custodian

3/13/20

\_\_\_\_\_  
Date/Time

*1700*



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/16/20 06:13

**S45@8'**  
**2003168-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/13/20 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003185	03/13/20	03/14/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/13/20 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		98.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/13/20 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003184	"	03/14/20	EPA 8015M	

Date Sampled: **03/13/20 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		117 %	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/16/20 06:13

**S46@14'**  
**2003168-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/13/20 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003185	03/13/20	03/14/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>14</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **03/13/20 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		157 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/13/20 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003184	"	03/14/20	EPA 8015M	

Date Sampled: **03/13/20 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.8 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/16/20 06:13

**S47@22'**  
**2003168-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/13/20 09:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003185	03/13/20	03/14/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/13/20 09:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/13/20 09:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003184	"	03/14/20	EPA 8015M	

Date Sampled: **03/13/20 09:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		99.2 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/16/20 06:13

**S48@8'**  
**2003168-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/13/20 09:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003185	03/13/20	03/14/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/13/20 09:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/13/20 09:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003184	"	03/14/20	EPA 8015M	

Date Sampled: **03/13/20 09:55**

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

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/16/20 06:13

**S49@14'**  
**2003168-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/13/20 09:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003185	03/13/20	03/14/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/13/20 09:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		97.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/13/20 09:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003184	"	03/14/20	EPA 8015M	

Date Sampled: **03/13/20 09:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		97.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/16/20 06:13

**S50@22'**  
**2003168-06 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/13/20 10:01**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003185	03/13/20	03/14/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/13/20 10:01**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		98.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/13/20 10:01**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003184	"	03/14/20	EPA 8015M	

Date Sampled: **03/13/20 10:01**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/16/20 06:13

**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 2003185 - EPA 5030 Soil MS**

**Blank (2003185-BLK1)**

Prepared & Analyzed: 03/13/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		99.1	23-173			
Surrogate: Toluene-d8	0.0437		"	0.0400		109	20-170			
Surrogate: 4-Bromofluorobenzene	0.0441		"	0.0400		110	21-167			

**LCS (2003185-BS1)**

Prepared & Analyzed: 03/13/20

Benzene	0.0723	0.0020	mg/kg	0.100		72.3	70-130			
Toluene	0.0973	0.0050	"	0.100		97.3	70-130			
Ethylbenzene	0.0772	0.0050	"	0.100		77.2	70-130			
m,p-Xylene	0.153	0.010	"	0.200		76.6	70-130			
o-Xylene	0.0724	0.0050	"	0.100		72.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		99.1	23-173			
Surrogate: Toluene-d8	0.0438		"	0.0400		109	20-170			
Surrogate: 4-Bromofluorobenzene	0.0435		"	0.0400		109	21-167			

**Matrix Spike (2003185-MS1)**

Source: 2003167-01

Prepared & Analyzed: 03/13/20

Benzene	0.0743	0.0020	mg/kg	0.100	ND	74.3	70-130			
Toluene	0.101	0.0050	"	0.100	ND	101	70-130			
Ethylbenzene	0.0800	0.0050	"	0.100	ND	80.0	70-130			
m,p-Xylene	0.154	0.010	"	0.200	ND	77.0	70-130			
o-Xylene	0.0738	0.0050	"	0.100	ND	73.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0446		"	0.0400		111	20-170			
Surrogate: 4-Bromofluorobenzene	0.0530		"	0.0400		132	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: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/16/20 06:13

**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 2003185 - EPA 5030 Soil MS**

**Matrix Spike Dup (2003185-MSD1)**

Source: 2003167-01

Prepared & Analyzed: 03/13/20

Benzene	0.0789	0.0020	mg/kg	0.100	ND	78.9	70-130	5.99	30
Toluene	0.0939	0.0050	"	0.100	ND	93.9	70-130	7.38	30
Ethylbenzene	0.0788	0.0050	"	0.100	ND	78.8	70-130	1.59	30
m,p-Xylene	0.157	0.010	"	0.200	ND	78.3	70-130	1.62	30
o-Xylene	0.0750	0.0050	"	0.100	ND	75.0	70-130	1.69	30
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0400		99.8	23-173		
Surrogate: Toluene-d8	0.0448		"	0.0400		112	20-170		
Surrogate: 4-Bromofluorobenzene	0.0584		"	0.0400		146	21-167		

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/16/20 06:13

**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 2003184 - EPA 3550A**

**Blank (2003184-BLK1)**

Prepared: 03/13/20 Analyzed: 03/14/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2003184-BS1)**

Prepared: 03/13/20 Analyzed: 03/14/20

C10-C28 (DRO) 504 50 mg/kg 500 101 70-130

**Matrix Spike (2003184-MS1)**

**Source: 2003167-01**

Prepared: 03/13/20 Analyzed: 03/14/20

C10-C28 (DRO) 592 50 mg/kg 500 158 86.8 70-130

**Matrix Spike Dup (2003184-MSD1)**

**Source: 2003167-01**

Prepared: 03/13/20 Analyzed: 03/14/20

C10-C28 (DRO) 529 50 mg/kg 500 158 74.3 70-130 11.1 20

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/16/20 06:13

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 17, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Cecil K 35-29,30; Schwab 26-12F,13F

Work Order #2003186

Enclosed are the results of analyses for samples received by Summit Scientific on 03/16/20 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/17/20 06:37

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GS01	2003186-01	Water	03/16/20 08:50	03/16/20 16:30

Summit Scientific

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# Summit Scientific

2003186

1657 Table Mountain Drive • Golden, Colorado 80407  
303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst  
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com  
City/State/Zip: Broomfield/ CO/ 80020  
Phone: 303-487-1228 Project Name: Cecil K 35-29,30 ; Schwab 26-12F,13F  
Sampler Name: Cody Gressell 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	8260 BTEX	8260B GBTEXN	8015 DRO	pH/EC		Hold
1	G501	3/16/20	0850	1	X				X				X					
2	G502	↓	0853	↓	↓				↓								X	
3	G503	↓	0856	↓	↓				↓								X	
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: Cody Gressell	Date/Time: 3/16/20 1620	Received by: <del>Tasman's Lock Box</del> Summit	Date/Time: 03/16/2020 1630	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___	Notes:
Relinquished by: Tasman's Lock Box Summit	Date/Time: 03/16/2020 1630	Received by: 	Date/Time: 03/16/2020 1630	Sample Integrity: Temperature Upon Receipt: 5.5	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

**Sample Receipt Checklist**

S2 Work Order 2003186

Client: PDC / TASMAN Client Project ID: CECIL K 35 - 29, 30

Shipped Via:  H.D./P.U./FedEx/UPS/USPS/Other  Airbill #: SCHWAB 26 -12F, 13F

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

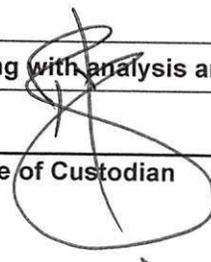
Temp (°C)	5.5
-----------	-----

Thermometer ID: 61857155-K

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

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

3/16/20  
Date/Time



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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/17/20 06:37

**GS01**  
**2003186-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/16/20 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>12</b>	1.0	ug/l	1	2003197	03/16/20	03/16/20	EPA 8260B	
<b>Toluene</b>	<b>26</b>	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>3.0</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>51</b>	2.0	"	"	"	"	"	"	

Date Sampled: **03/16/20 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/17/20 06:37

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch 2003197 - EPA 5030 Water MS

##### Blank (2003197-BLK1)

Prepared & Analyzed: 03/16/20

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.3		96.8		23-173		
Surrogate: Toluene-d8	13.2		"	13.3		98.6		20-170		
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.8		21-167		

##### LCS (2003197-BS1)

Prepared: 03/16/20 Analyzed: 03/17/20

Benzene	30.4	1.0	ug/l	33.3		91.3		51-132		
Toluene	34.6	1.0	"	33.3		104		51-138		
Ethylbenzene	30.6	1.0	"	33.3		91.7		58-146		
m,p-Xylene	59.2	2.0	"	66.7		88.7		57-144		
o-Xylene	29.0	1.0	"	33.3		87.1		53-146		
Surrogate: 1,2-Dichloroethane-d4	11.2		"	13.3		84.2		23-173		
Surrogate: Toluene-d8	15.8		"	13.3		119		20-170		
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.2		21-167		

##### LCS Dup (2003197-BSD1)

Prepared: 03/16/20 Analyzed: 03/17/20

Benzene	35.3	1.0	ug/l	33.3		106		51-132	14.9	20
Toluene	37.2	1.0	"	33.3		112		51-138	7.18	20
Ethylbenzene	36.6	1.0	"	33.3		110		58-146	18.0	20
m,p-Xylene	70.5	2.0	"	66.7		106		57-144	17.5	20
o-Xylene	35.0	1.0	"	33.3		105		53-146	18.5	20
Surrogate: 1,2-Dichloroethane-d4	11.6		"	13.3		87.4		23-173		
Surrogate: Toluene-d8	14.1		"	13.3		106		20-170		
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.3		21-167		

Summit Scientific

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

Project: Cecil K 35-29,30; Schwab 26-12F,13F

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/17/20 06:37

### 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