

**TABLE 1  
FORMER PLUMB 2 & 3 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 @ 6'	10/9/2020	6	<0.0020	<0.0050	0.0097	<0.010	0.010	<b>3,663</b>
SS02 @ 8'	10/12/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	61.4
SS03 @ 6'	10/13/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS04 @ 8'	10/13/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS05 @ 8'	10/13/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	130
SS06 @ 6'	10/14/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	6.8
SS07 @ 6'	10/14/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	3.9
SS08 @ 8'	10/14/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS09 @ 6'	10/14/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS10 @ 8'	10/14/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	2.5
SS11 @ 8'	10/15/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS12 @ 4'	10/15/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS13 @ 4'	10/15/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS14 @ 4'	10/15/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS15 @ 4'	10/15/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS16 @ 8'	10/15/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS17 @ 8'	10/15/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS18 @ 6'	10/16/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS19 @ 4'	10/16/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS20 @ 6'	10/16/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS21 @ 4'	10/16/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS22 @ 8'	10/16/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS23 @ 6'	10/16/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS24 @ 4'	10/16/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS25 @ 8'	10/16/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS26 @ 6'	10/19/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS27 @ 4'	10/19/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS28 @ 8'	10/19/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS29 @ 8'	10/19/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS30 @ 4'	10/20/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS31 @ 6'	10/20/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS32 @ 4'	10/20/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS33 @ 6'	10/20/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS34 @ 8'	10/20/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS35 @ 8'	10/20/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS36 @ 8'	10/20/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS37 @ 4'	10/21/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS38 @ 6'	10/21/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS39 @ 8'	10/21/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS40 @ 4'	10/21/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS41 @ 6'	10/21/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS42 @ 8'	10/21/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS43 @ 4'	10/21/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS44 @ 6'	10/21/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS45 @ 8'	10/21/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS46 @ 4'	10/21/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS47 @ 6'	10/21/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50

**TABLE 1**  
**FORMER PLUMB 2 & 3 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>
SS48 @ 8'	10/22/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS49 @ 4'	10/22/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS50 @ 6'	10/22/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS51 @ 4'	10/22/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS52 @ 6'	10/22/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS53 @ 8'	10/22/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS54 @ 4'	10/22/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS55 @ 6'	10/22/2020	6	0.0094	0.031	<0.0050	0.036	<0.010	0.58
SS56 @ 8'	10/22/2020	8	0.019	0.062	<0.0050	0.053	<0.010	0.71
SS57 @ 8'	10/22/2020	8	<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. = Feet

bgs = Below ground surface

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

**TABLE 2**  
**FORMER PLUMB 2 & 3 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>	
GW01	10/26/2020	<b>150</b>	<b>720</b>	20	290	~ 4.5'

**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. = Feet

bgs = 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

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 28, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Plumb 2&3

Work Order #2010125

Enclosed are the results of analyses for samples received by Summit Scientific on 10/09/20 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: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/28/20 09:43

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@6'	2010125-01	Soil	10/09/20 09:00	10/09/20 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

S<sub>2</sub>

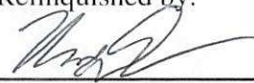
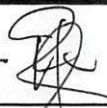

2010125

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: <u>Plumb 2 &amp; 3</u>
Sampler Name: <u>Max Dahlgren</u>	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	SS01 @ 6'	10/9/20	900	1			X			X			X	X				
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: 	Date/Time: 10/9/20 1200	Received by: 	Date/Time: 10/9/2020 1200	<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>7.9</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	<b>Notes:</b>
Relinquished by: <b>Tasman's Lock Box</b>	Date/Time:	Received by: 	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 7010125

Client: PDC/ARMOR

Client Project ID: Plumb 2 & 3

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

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

Temp (°C) 7.9

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.	<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.

TS  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

18/09/2020  
Date/Time



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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/28/20 09:43

**SS01@6'**  
**2010125-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/09/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BDJ0088	10/09/20	10/09/20	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.0097</b>	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.010</b>	0.010		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>63</b>	0.50		"	"	"	"	"	"	

Date Sampled: **10/09/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		88.5 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/09/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>C10-C28 (DRO)</b>	<b>3600</b>	50		mg/kg	1	BDJ0089	"	10/09/20	EPA 8015M	

Date Sampled: **10/09/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		90.2 %		30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/28/20 09:43

**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 BDJ0088 - EPA 5030 Soil MS**

**Blank (BDJ0088-BLK1)**

Prepared: 10/09/00 Analyzed: 10/09/20

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	0.0386		"	0.0400		96.6	23-173			
Surrogate: Toluene-d8	0.0425		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.1	21-167			

**LCS (BDJ0088-BS1)**

Prepared: 10/09/00 Analyzed: 10/09/20

Benzene	0.0647	0.0020	mg/kg	0.0750		86.3	70-130			
Toluene	0.0688	0.0050	"	0.0750		91.8	70-130			
Ethylbenzene	0.0877	0.0050	"	0.0750		117	70-130			
m,p-Xylene	0.168	0.010	"	0.150		112	70-130			
o-Xylene	0.0842	0.0050	"	0.0750		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0296		"	0.0400		74.0	23-173			
Surrogate: Toluene-d8	0.0380		"	0.0400		94.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.3	21-167			

**Matrix Spike (BDJ0088-MS1)**

Source: 2010069-01

Prepared: 10/09/00 Analyzed: 10/09/20

Benzene	0.0629	0.0020	mg/kg	0.0750	ND	83.9	70-130			
Toluene	0.0721	0.0050	"	0.0750	ND	96.2	70-130			
Ethylbenzene	0.0863	0.0050	"	0.0750	ND	115	70-130			
m,p-Xylene	0.173	0.010	"	0.150	0.00474	112	70-130			
o-Xylene	0.0868	0.0050	"	0.0750	ND	116	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0350		"	0.0400		87.4	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.3	21-167			

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/28/20 09:43

**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 BDJ0088 - EPA 5030 Soil MS**

Matrix Spike Dup (BDJ0088-MSD1)	Source: 2010069-01			Prepared: 10/09/00 Analyzed: 10/09/20						
Benzene	0.0652	0.0020	mg/kg	0.0750	ND	87.0	70-130	3.56	30	
Toluene	0.0756	0.0050	"	0.0750	ND	101	70-130	4.71	30	
Ethylbenzene	0.0900	0.0050	"	0.0750	ND	120	70-130	4.12	30	
m,p-Xylene	0.180	0.010	"	0.150	0.00474	117	70-130	4.10	30	
o-Xylene	0.0906	0.0050	"	0.0750	ND	121	70-130	4.23	30	
Surrogate: 1,2-Dichloroethane-d4	0.0346		"	0.0400		86.5	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	21-167			

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/28/20 09:43

**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 BDJ0089 - EPA 3550A**

**Blank (BDJ0089-BLK1)**

Prepared & Analyzed: 10/09/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (BDJ0089-BS1)**

Prepared & Analyzed: 10/09/20

C10-C28 (DRO) 565 50 mg/kg 500 113 70-130

**Matrix Spike (BDJ0089-MS1)**

Source: 2010069-01

Prepared & Analyzed: 10/09/20

C10-C28 (DRO) 1150 50 mg/kg 500 455 139 70-130 QM-07

**Matrix Spike Dup (BDJ0089-MSD1)**

Source: 2010069-01

Prepared & Analyzed: 10/09/20

C10-C28 (DRO) 1690 50 mg/kg 500 455 246 70-130 37.9 20 QM-07

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/28/20 09:43

### Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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

October 12, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Plumb 2&3

Work Order #2010138

Enclosed are the results of analyses for samples received by Summit Scientific on 10/12/20 15:10. 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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/12/20 23:39

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS02@8'	2010138-01	Soil	10/12/20 13:50	10/12/20 15:10

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Summit Scientific

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

# Summit Scientific

S<sub>2</sub>

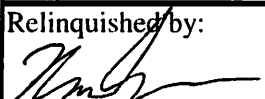

2010/38

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

Page ( of /

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: Plumb 2 & 3  
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		
1	SS02 @ 8'	10/12/20	1350	1			X			X				X	X			
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: 	Date/Time: 10/12/20 1510	Received by: 	Date/Time: 10/12/2020 1510	<b>Turn Around Time (Check)</b> 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"/> <b>Sample Integrity:</b> Temperature Upon Receipt: 4.5 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	<b>Notes:</b>
Relinquished by: Tasman's Lock Box	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 2010138

Client: PDC/TASMAN Client Project ID: Plumb 2 & 3

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

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

Temp (°C) 4.5

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.	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 <b>(excluding cooling)</b> <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.

TC  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

10/12/2020  
Date/Time



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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/12/20 23:39

**SS02@8'**  
**2010138-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/12/20 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BDJ0127	10/12/20	10/12/20	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>2.4</b>	<b>0.50</b>		"	"	"	"	"	"	

Date Sampled: **10/12/20 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		89.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		124 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/12/20 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>C10-C28 (DRO)</b>	<b>59</b>	<b>50</b>		mg/kg	1	BDJ0128	10/12/20	10/12/20	EPA 8015M	

Date Sampled: **10/12/20 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		90.1 %		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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/12/20 23:39

### 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 BDJ0127 - EPA 5030 Soil MS

##### Blank (BDJ0127-BLK1)

Prepared & Analyzed: 10/12/20

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	0.0353		"	0.0400		88.2	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	21-167			

##### LCS (BDJ0127-BS1)

Prepared & Analyzed: 10/12/20

Benzene	0.137	0.0020	mg/kg	0.150		91.5	70-130			
Toluene	0.149	0.0050	"	0.150		99.5	70-130			
Ethylbenzene	0.146	0.0050	"	0.150		97.3	70-130			
m,p-Xylene	0.292	0.010	"	0.300		97.5	70-130			
o-Xylene	0.149	0.0050	"	0.150		99.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0360		"	0.0400		90.0	23-173			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		100	21-167			

##### Matrix Spike (BDJ0127-MS1)

Source: 2010086-02

Prepared & Analyzed: 10/12/20

Benzene	0.127	0.0020	mg/kg	0.150	ND	84.8	70-130			
Toluene	0.129	0.0050	"	0.150	ND	85.7	70-130			
Ethylbenzene	0.114	0.0050	"	0.150	ND	75.8	70-130			
m,p-Xylene	0.224	0.010	"	0.300	0.00348	73.6	70-130			
o-Xylene	0.114	0.0050	"	0.150	ND	75.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0368		"	0.0400		92.0	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.0	21-167			

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/12/20 23:39

**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 BDJ0127 - EPA 5030 Soil MS**

Matrix Spike Dup (BDJ0127-MSD1)	Source: 2010086-02			Prepared & Analyzed: 10/12/20						
Benzene	0.129	0.0020	mg/kg	0.150	ND	86.0	70-130	1.38	30	
Toluene	0.133	0.0050	"	0.150	ND	88.8	70-130	3.55	30	
Ethylbenzene	0.123	0.0050	"	0.150	ND	82.3	70-130	8.27	30	
m,p-Xylene	0.243	0.010	"	0.300	0.00348	80.0	70-130	8.18	30	
o-Xylene	0.124	0.0050	"	0.150	ND	82.7	70-130	8.79	30	
Surrogate: 1,2-Dichloroethane-d4	0.0353		"	0.0400		88.4	23-173			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	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: Plumb 2&3

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/12/20 23:39

**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 BDJ0128 - EPA 3550A**

**Blank (BDJ0128-BLK1)**

Prepared & Analyzed: 10/12/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (BDJ0128-BS1)**

Prepared & Analyzed: 10/12/20

C10-C28 (DRO) 546 50 mg/kg 500 109 70-130

**Matrix Spike (BDJ0128-MS1)**

Source: 2010138-01

Prepared & Analyzed: 10/12/20

C10-C28 (DRO) 662 50 mg/kg 500 59.3 121 70-130

**Matrix Spike Dup (BDJ0128-MSD1)**

Source: 2010138-01

Prepared & Analyzed: 10/12/20

C10-C28 (DRO) 684 50 mg/kg 500 59.3 125 70-130 3.23 20

Summit Scientific

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

Project: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/12/20 23:39

### 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

October 15, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

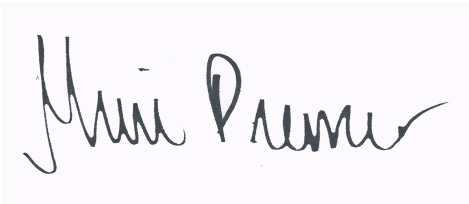
Denver, CO 80203

RE: Plumb 2&3

Work Order #2010161

Enclosed are the results of analyses for samples received by Summit Scientific on 10/13/20 17:06. 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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:31

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS03@6'	2010161-01	Soil	10/13/20 10:40	10/13/20 17:06
SS04@8'	2010161-02	Soil	10/13/20 10:45	10/13/20 17:06
SS05@8'	2010161-03	Soil	10/13/20 14:30	10/13/20 17:06

Summit Scientific

*The results in 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>

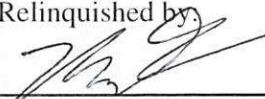
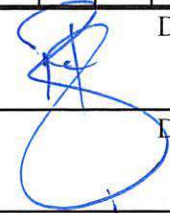
2010161

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: Plumb 2 & 3  
Sampler Name: Max Dahlgren 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	\$260 BTEX	\$260B GBTEXN	\$015 DRO	pH/EC		
1	SS03 @ 6'	10/13/20	1040	1			X							X	X			
2	SS04 @ 8'	↓	1045	↓			↓							↓	↓			
3	SS05 @ 8'	↓	1430	↓			↓							↓	↓			
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: 	Date/Time: 10/13/20 1600	Received by: 	Date/Time: 10/13/2026 1600	<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>5.7</u> Samples Intact: <input checked="" type="checkbox"/> Yes No	<b>Notes:</b>
Relinquished by: <b>Tasman's Lock Box</b>	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 2010161

Client: POC / TAsman Client Project ID: Plumb 2 & 3

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>5.7</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"/>	<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.

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

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

10/13/2020  
Date/Time



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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:31

**SS03@6'**  
**2010161-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/13/20 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0145	10/13/20	10/13/20	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: **10/13/20 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %		23-173	"	"	"	"	
Surrogate: Toluene-d8		99.4 %		20-170	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %		21-167	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/13/20 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0146	"	10/13/20	EPA 8015M	

Date Sampled: **10/13/20 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		93.9 %		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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:31

**SS04@8'**  
**2010161-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/13/20 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0145	10/13/20	10/13/20	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: **10/13/20 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		86.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/13/20 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0146	"	10/13/20	EPA 8015M	

Date Sampled: **10/13/20 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		92.9 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:31

**SS05@8'**  
**2010161-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/13/20 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0145	10/13/20	10/13/20	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: **10/13/20 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		94.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/13/20 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>C10-C28 (DRO)</b>	<b>130</b>	50	mg/kg	1	BDJ0146	"	10/13/20	EPA 8015M	

Date Sampled: **10/13/20 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		86.1 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:31

**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 BDJ0145 - EPA 5030 Soil MS**

**Blank (BDJ0145-BLK1)**

Prepared & Analyzed: 10/13/20

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	0.0413		"	0.0400		103		23-173			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.3		20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103		21-167			

**LCS (BDJ0145-BS1)**

Prepared & Analyzed: 10/13/20

Benzene	0.0932	0.0020	mg/kg	0.100		93.2		70-130			
Toluene	0.0847	0.0050	"	0.100		84.7		70-130			
Ethylbenzene	0.105	0.0050	"	0.100		105		70-130			
m,p-Xylene	0.215	0.010	"	0.200		107		70-130			
o-Xylene	0.112	0.0050	"	0.100		112		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0413		"	0.0400		103		23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102		20-170			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		102		21-167			

**Matrix Spike (BDJ0145-MS1)**

Source: 2010160-01

Prepared & Analyzed: 10/13/20

Benzene	0.0943	0.0020	mg/kg	0.100	ND	94.3		70-130			
Toluene	0.0842	0.0050	"	0.100	ND	84.2		70-130			
Ethylbenzene	0.104	0.0050	"	0.100	ND	104		70-130			
m,p-Xylene	0.210	0.010	"	0.200	0.00429	103		70-130			
o-Xylene	0.111	0.0050	"	0.100	ND	111		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104		23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100		20-170			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2		21-167			

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/15/20 16:31

**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 BDJ0145 - EPA 5030 Soil MS**

Matrix Spike Dup (BDJ0145-MSD1)	Source: 2010160-01			Prepared & Analyzed: 10/13/20						
Benzene	0.0913	0.0020	mg/kg	0.100	ND	91.3	70-130	3.27	30	
Toluene	0.0796	0.0050	"	0.100	ND	79.6	70-130	5.61	30	
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	4.01	30	
m,p-Xylene	0.204	0.010	"	0.200	0.00429	99.8	70-130	3.02	30	
o-Xylene	0.108	0.0050	"	0.100	ND	108	70-130	3.29	30	
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	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: Plumb 2&3  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/15/20 16:31

**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 BDJ0146 - EPA 3550A**

**Blank (BDJ0146-BLK1)**

Prepared & Analyzed: 10/13/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (BDJ0146-BS1)**

Prepared & Analyzed: 10/13/20

C10-C28 (DRO) 594 50 mg/kg 500 119 70-130

**Matrix Spike (BDJ0146-MS1)**

Source: 2010160-01

Prepared & Analyzed: 10/13/20

C10-C28 (DRO) 536 50 mg/kg 500 21.6 103 70-130

**Matrix Spike Dup (BDJ0146-MSD1)**

Source: 2010160-01

Prepared & Analyzed: 10/13/20

C10-C28 (DRO) 555 50 mg/kg 500 21.6 107 70-130 3.40 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: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:31

### 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

October 15, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

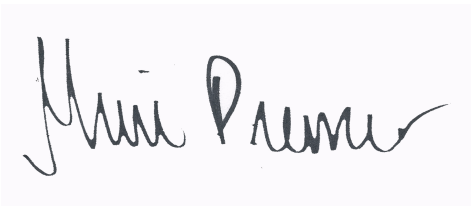
Denver, CO 80203

RE: Plumb 2&3

Work Order #2010179

Enclosed are the results of analyses for samples received by Summit Scientific on 10/14/20 15:30. 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: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:53

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS06@6'	2010179-01	Soil	10/14/20 09:00	10/14/20 15:30
SS07@6'	2010179-02	Soil	10/14/20 09:20	10/14/20 15:30
SS08@8'	2010179-03	Soil	10/14/20 09:30	10/14/20 15:30
SS09@6'	2010179-04	Soil	10/14/20 09:45	10/14/20 15:30
SS10@8'	2010179-05	Soil	10/14/20 09:50	10/14/20 15:30

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>

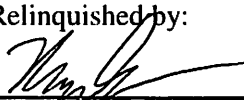

2010179

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: Plumb 2 & 3  
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	\$260 BTEX	\$260B GBTEXN	\$015 DRO	
1	SS06 @ 6'	10/14/20	900	1			X			X			X	X		
2	SS07 @ 6'		920													
3	SS08 @ 4'		930													
4	SS09 @ 6'		945													
5	SS10 @ 8'		950													
6																
7																
8																
9																
10																

Relinquished by: 	Date/Time: 10/14/20 1530	Received by: 	Date/Time: 10/14/2020 1530	<b>Turn Around Time (Check)</b> 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"/> <b>Sample Integrity:</b> Temperature Upon Receipt: 4.1 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Notes:</b>
Relinquished by: <del>Tasman's Lock Box</del>	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 2010179

Client: PDC/ITASMAN Client Project ID: Plumb 2e3

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

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

Temp (°C) 4.1

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.

TC  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

10/14/2020  
Date/Time



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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:53

**SS06@6'**  
**2010179-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BDJ0170	10/14/20	10/14/20	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>6.8</b>	<b>0.50</b>		"	"	"	"	"	"	

Date Sampled: **10/14/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		89.5 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BDJ0171	"	10/14/20	EPA 8015M	

Date Sampled: **10/14/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		100 %		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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:53

**SS07@6'**  
**2010179-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/20 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0170	10/14/20	10/14/20	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>3.9</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **10/14/20 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>		91.5 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		104 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/20 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0171	"	10/14/20	EPA 8015M	

Date Sampled: **10/14/20 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>		94.0 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:53

**SS08@8'**  
**2010179-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/20 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0170	10/14/20	10/14/20	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: **10/14/20 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		92.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/20 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0171	"	10/14/20	EPA 8015M	

Date Sampled: **10/14/20 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		89.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:53

**SS09@6'**  
**2010179-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/20 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0170	10/14/20	10/14/20	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: **10/14/20 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.5 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/20 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0171	"	10/14/20	EPA 8015M	

Date Sampled: **10/14/20 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		86.5 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/15/20 16:53

**SS10@8'**  
**2010179-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/20 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0170	10/14/20	10/14/20	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>2.5</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **10/14/20 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		85.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		114 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/20 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0171	"	10/14/20	EPA 8015M	

Date Sampled: **10/14/20 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.3 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:53

### 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 BDJ0170 - EPA 5030 Soil MS

##### Blank (BDJ0170-BLK1)

Prepared & Analyzed: 10/14/20

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	0.0390		"	0.0400		97.6	23-173				
Surrogate: Toluene-d8	0.0411		"	0.0400		103	20-170				
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0400		95.2	21-167				

##### LCS (BDJ0170-BS1)

Prepared & Analyzed: 10/14/20

Benzene	0.0891	0.0020	mg/kg	0.100		89.1	70-130				
Toluene	0.0900	0.0050	"	0.100		90.0	70-130				
Ethylbenzene	0.107	0.0050	"	0.100		107	70-130				
m,p-Xylene	0.211	0.010	"	0.200		106	70-130				
o-Xylene	0.109	0.0050	"	0.100		109	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0364		"	0.0400		91.1	23-173				
Surrogate: Toluene-d8	0.0434		"	0.0400		108	20-170				
Surrogate: 4-Bromofluorobenzene	0.0359		"	0.0400		89.8	21-167				

##### Matrix Spike (BDJ0170-MS1)

Source: 2010179-01

Prepared & Analyzed: 10/14/20

Benzene	0.0904	0.0020	mg/kg	0.100	ND	90.4	70-130				
Toluene	0.0834	0.0050	"	0.100	ND	83.4	70-130				
Ethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130				
m,p-Xylene	0.219	0.010	"	0.200	0.00321	108	70-130				
o-Xylene	0.112	0.0050	"	0.100	ND	112	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0364		"	0.0400		91.0	23-173				
Surrogate: Toluene-d8	0.0383		"	0.0400		95.7	20-170				
Surrogate: 4-Bromofluorobenzene	0.0410		"	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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/15/20 16:53

**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 BDJ0170 - EPA 5030 Soil MS**

Matrix Spike Dup (BDJ0170-MSD1)	Source: 2010179-01			Prepared & Analyzed: 10/14/20						
Benzene	0.0904	0.0020	mg/kg	0.100	ND	90.4	70-130	0.0332	30	
Toluene	0.0871	0.0050	"	0.100	ND	87.1	70-130	4.29	30	
Ethylbenzene	0.116	0.0050	"	0.100	ND	116	70-130	4.50	30	
m,p-Xylene	0.237	0.010	"	0.200	0.00321	117	70-130	7.73	30	
o-Xylene	0.120	0.0050	"	0.100	ND	120	70-130	6.42	30	
Surrogate: 1,2-Dichloroethane-d4	0.0361		"	0.0400		90.3	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.7	21-167			

Summit Scientific

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

Project: Plumb 2&3  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/15/20 16:53

**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 BDJ0171 - EPA 3550A**

**Blank (BDJ0171-BLK1)**

Prepared & Analyzed: 10/14/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (BDJ0171-BS1)**

Prepared & Analyzed: 10/14/20

C10-C28 (DRO) 523 50 mg/kg 500 105 70-130

**Matrix Spike (BDJ0171-MS1)**

Source: 2010179-01

Prepared & Analyzed: 10/14/20

C10-C28 (DRO) 562 50 mg/kg 500 ND 112 70-130

**Matrix Spike Dup (BDJ0171-MSD1)**

Source: 2010179-01

Prepared: 10/14/20 Analyzed: 10/15/20

C10-C28 (DRO) 559 50 mg/kg 500 ND 112 70-130 0.599 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: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/15/20 16:53

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 16, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Plumb 2&3

Work Order # 2010197

Enclosed are the results of analyses for samples received by Summit Scientific on 10/15/20 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury

President



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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/16/20 07:09

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS11@8'	2010197-01	Soil	10/15/20 09:00	10/15/20 16:00
SS12@4'	2010197-02	Soil	10/15/20 09:30	10/15/20 16:00
SS13@4'	2010197-03	Soil	10/15/20 09:35	10/15/20 16:00
SS14@4'	2010197-04	Soil	10/15/20 09:40	10/15/20 16:00
SS15@4'	2010197-05	Soil	10/15/20 09:45	10/15/20 16:00
SS16@8'	2010197-06	Soil	10/15/20 11:45	10/15/20 16:00
SS17@8'	2010197-07	Soil	10/15/20 14:00	10/15/20 16:00

Summit Scientific

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

# Summit Scientific

S<sub>2</sub>


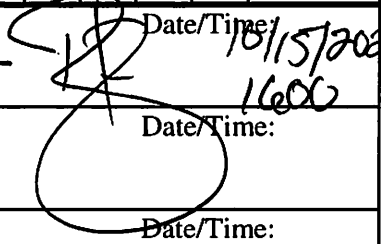
2010197

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: <u>Plumb 2 &amp; 3</u>
Sampler Name: <u>Max Dahlgren</u>	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	
1	SS11 @ 8'	10/15/20	900	1			X			X			X	X		
2	SS12 @ 4'		930													
3	SS13 @ 4'		935													
4	SS14 @ 4'		940													
5	SS15 @ 4'		945													
6	SS16 @ 8'		1145													
7	SS17 @ 8'		1400													
8																
9																
10																

Relinquished by: 	Date/Time: 10/15/20 1600	Received by: 	Date/Time: 10/15/20 1600	Turn Around Time (Check)	Notes:
Relinquished by: <b>Tasman's Lock Box</b>	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
				48 hours <input type="checkbox"/>	
				Sample Integrity:	
				Temperature Upon Receipt: <u>3.2</u>	
				Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

**Sample Receipt Checklist**

S2 Work Order 2010197

Client: POCI TASMAN Client Project ID: Pumps 2 & 3

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

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

Temp (°C) 3.2

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"/>	<u>SAME DAY</u>
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.

POC  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

10/15/2020  
Date/Time



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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/16/20 07:09

**SS11@8'**  
**2010197-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BDJ0193	10/15/20	10/15/20	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: **10/15/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/15/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BDJ0194	10/15/20	10/15/20	EPA 8015M	

Date Sampled: **10/15/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		89.7 %		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: Plumb 2&3 Project Number: [none] Project Manager: Mark Longhurst	Reported: 10/16/20 07:09
--	---	-----------------------------

**SS12@4'**  
**2010197-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/20 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0193	10/15/20	10/15/20	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: **10/15/20 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		94.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/15/20 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0194	10/15/20	10/15/20	EPA 8015M	

Date Sampled: **10/15/20 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		93.8 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/16/20 07:09

**SS13@4'**  
**2010197-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/20 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0193	10/15/20	10/15/20	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: **10/15/20 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/15/20 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0194	10/15/20	10/15/20	EPA 8015M	

Date Sampled: **10/15/20 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		96.2 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/16/20 07:09

**SS14@4'**  
**2010197-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/20 09:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0193	10/15/20	10/15/20	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: **10/15/20 09:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/15/20 09:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0194	10/15/20	10/15/20	EPA 8015M	

Date Sampled: **10/15/20 09:40**

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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/16/20 07:09

**SS15@4'**  
**2010197-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0193	10/15/20	10/15/20	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: **10/15/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		87.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/15/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0194	10/15/20	10/15/20	EPA 8015M	

Date Sampled: **10/15/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		99.5 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/16/20 07:09

**SS16@8'**  
**2010197-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/20 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0193	10/15/20	10/15/20	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: **10/15/20 11:45**

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

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/15/20 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0194	10/15/20	10/15/20	EPA 8015M	

Date Sampled: **10/15/20 11:45**

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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/16/20 07:09

**SS17@8'**  
**2010197-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0193	10/15/20	10/15/20	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: **10/15/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/15/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0194	10/15/20	10/16/20	EPA 8015M	

Date Sampled: **10/15/20 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/16/20 07:09

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

#### Summit Scientific

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

#### Batch BDJ0193 - EPA 5030 Soil MS

##### Blank (BDJ0193-BLK1)

Prepared & Analyzed: 10/15/20

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>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0345</i>		<i>"</i>	<i>0.0400</i>		<i>86.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0435</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>21-167</i>			

##### LCS (BDJ0193-BS1)

Prepared & Analyzed: 10/15/20

Benzene	0.0810	0.0020	mg/kg	0.100		81.0	70-130			
Toluene	0.0700	0.0050	"	0.100		70.0	70-130			
Ethylbenzene	0.108	0.0050	"	0.100		108	70-130			
m,p-Xylene	0.234	0.010	"	0.200		117	70-130			
o-Xylene	0.120	0.0050	"	0.100		120	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0357</i>		<i>"</i>	<i>0.0400</i>		<i>89.3</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0358</i>		<i>"</i>	<i>0.0400</i>		<i>89.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0417</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>21-167</i>			

##### Matrix Spike (BDJ0193-MS1)

Source: 2010197-01

Prepared & Analyzed: 10/15/20

Benzene	0.0787	0.0020	mg/kg	0.100	ND	78.7	70-130			
Toluene	0.0947	0.0050	"	0.100	ND	94.7	70-130			
Ethylbenzene	0.130	0.0050	"	0.100	ND	130	70-130			
m,p-Xylene	0.181	0.010	"	0.200	ND	90.7	70-130			
o-Xylene	0.110	0.0050	"	0.100	ND	110	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0344</i>		<i>"</i>	<i>0.0400</i>		<i>86.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0309</i>		<i>"</i>	<i>0.0400</i>		<i>77.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0428</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>21-167</i>			

Summit Scientific

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



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

Project: Plumb 2&3

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/16/20 07:09

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

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

**Batch BDJ0193 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BDJ0193-MSD1)</b>	<b>Source: 2010197-01</b>			<b>Prepared &amp; Analyzed: 10/15/20</b>						
Benzene	0.0856	0.0020	mg/kg	0.100	ND	85.6	70-130	8.40	30	
Toluene	0.0778	0.0050	"	0.100	ND	77.8	70-130	19.6	30	
Ethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130	9.04	30	
m,p-Xylene	0.192	0.010	"	0.200	ND	95.9	70-130	5.56	30	
o-Xylene	0.126	0.0050	"	0.100	ND	126	70-130	13.1	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0372</i>		<i>"</i>	<i>0.0400</i>		<i>93.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</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: Plumb 2&3 Project Number: [none] Project Manager: Mark Longhurst	Reported: 10/16/20 07:09
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**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BDJ0194 - EPA 3550A**

<b>Blank (BDJ0194-BLK1)</b>		Prepared: 10/15/20 Analyzed: 10/16/20								
C10-C28 (DRO)	ND	50	mg/kg							
<b>LCS (BDJ0194-BS1)</b>		Prepared: 10/15/20 Analyzed: 10/16/20								
C10-C28 (DRO)	602	50	mg/kg	500	120	70-130				
<b>Matrix Spike (BDJ0194-MS1)</b>		<b>Source: 2010197-01</b>		Prepared: 10/15/20 Analyzed: 10/16/20						
C10-C28 (DRO)	627	50	mg/kg	500	ND	125	70-130			
<b>Matrix Spike Dup (BDJ0194-MSD1)</b>		<b>Source: 2010197-01</b>		Prepared: 10/15/20 Analyzed: 10/16/20						
C10-C28 (DRO)	609	50	mg/kg	500	ND	122	70-130	2.98	20	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/16/20 07:09

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 18, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Plumb 2&3

Work Order #2010212

Enclosed are the results of analyses for samples received by Summit Scientific on 10/16/20 16:59. 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: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/18/20 18:35

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS18@6'	2010212-01	Soil	10/16/20 08:30	10/16/20 16:59
SS19@4'	2010212-02	Soil	10/16/20 08:35	10/16/20 16:59
SS20@6'	2010212-03	Soil	10/16/20 08:40	10/16/20 16:59
SS21@4'	2010212-04	Soil	10/16/20 08:45	10/16/20 16:59
SS22@8'	2010212-05	Soil	10/16/20 08:50	10/16/20 16:59
SS23@6'	2010212-06	Soil	10/16/20 10:10	10/16/20 16:59
SS24@4'	2010212-07	Soil	10/16/20 10:15	10/16/20 16:59
SS25@8'	2010212-08	Soil	10/16/20 12:40	10/16/20 16:59

Summit Scientific

*The results in 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

2010212

S<sub>2</sub>

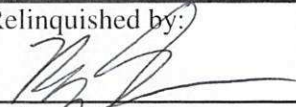
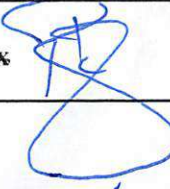
4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310

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: Plumb 243  
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	
1	SS18 @ 6'	10/16/20	830	1			X			X			X	X			
2	SS19 @ 4'		835	1													
3	SS20 @ 6'		840	1													
4	SS21 @ 4'		845	1													
5	SS22 @ 8'		850	1													
6	SS23 @ 6'		1010	1													
7	SS24 @ 4'		1015	1													
8	SS25 @ 8'		1240	1													
9																	
10																	

Relinquished by: 	Date/Time: 10/16/20 1515	Received by: 	Date/Time: 10/16/2020	<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: 5.3 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Notes:</b>
Relinquished by: <b>Tasman's Lock Box</b>	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 2010212

Client: POC/TABMAN Client Project ID: Plumb 2 & 3

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>5.3</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"/>	<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.

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

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

10/16/2020  
Date/Time



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

Project: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/18/20 18:35

**SS18@6'**  
**2010212-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/16/20 08:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0214	10/16/20	10/17/20	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: **10/16/20 08:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/16/20 08:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0215	10/16/20	10/16/20	EPA 8015M	

Date Sampled: **10/16/20 08:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/18/20 18:35

**SS19@4'**  
**2010212-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/16/20 08:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0214	10/16/20	10/17/20	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: **10/16/20 08:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/16/20 08:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0215	10/16/20	10/16/20	EPA 8015M	

Date Sampled: **10/16/20 08:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		97.5 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/18/20 18:35

**SS20@6'**  
**2010212-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/16/20 08:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0214	10/16/20	10/17/20	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: **10/16/20 08:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/16/20 08:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0215	10/16/20	10/16/20	EPA 8015M	

Date Sampled: **10/16/20 08:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		97.0 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/18/20 18:35

**SS21@4'**  
**2010212-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/16/20 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0214	10/16/20	10/17/20	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: **10/16/20 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.0 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/16/20 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0215	10/16/20	10/16/20	EPA 8015M	

Date Sampled: **10/16/20 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		98.3 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/18/20 18:35

**SS22@8'**  
**2010212-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/16/20 08:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0214	10/16/20	10/17/20	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: **10/16/20 08:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/16/20 08:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0215	10/16/20	10/16/20	EPA 8015M	

Date Sampled: **10/16/20 08:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		95.2 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/18/20 18:35

**SS23@6'**  
**2010212-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/16/20 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0214	10/16/20	10/17/20	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: **10/16/20 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/16/20 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0215	10/16/20	10/16/20	EPA 8015M	

Date Sampled: **10/16/20 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		94.0 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/18/20 18:35

**SS24@4'**  
**2010212-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/16/20 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0214	10/16/20	10/17/20	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: **10/16/20 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/16/20 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0215	10/16/20	10/16/20	EPA 8015M	

Date Sampled: **10/16/20 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		92.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/18/20 18:35

**SS25@8'**  
**2010212-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/16/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0214	10/16/20	10/17/20	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: **10/16/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/16/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0215	10/16/20	10/16/20	EPA 8015M	

Date Sampled: **10/16/20 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		90.0 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/18/20 18:35

### 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 BDJ0214 - EPA 5030 Soil MS

##### Blank (BDJ0214-BLK1)

Prepared: 10/16/20 Analyzed: 10/17/20

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	0.0386		"	0.0400		96.5	23-173				
Surrogate: Toluene-d8	0.0394		"	0.0400		98.4	20-170				
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	21-167				

##### LCS (BDJ0214-BS1)

Prepared: 10/16/20 Analyzed: 10/17/20

Benzene	0.0865	0.0020	mg/kg	0.100		86.5	70-130				
Toluene	0.0796	0.0050	"	0.100		79.6	70-130				
Ethylbenzene	0.101	0.0050	"	0.100		101	70-130				
m,p-Xylene	0.206	0.010	"	0.200		103	70-130				
o-Xylene	0.110	0.0050	"	0.100		110	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0400		100	23-173				
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170				
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	21-167				

##### Matrix Spike (BDJ0214-MS1)

Source: 2010212-01

Prepared: 10/16/20 Analyzed: 10/17/20

Benzene	0.0847	0.0020	mg/kg	0.100	ND	84.7	70-130				
Toluene	0.0792	0.0050	"	0.100	ND	79.2	70-130				
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130				
m,p-Xylene	0.205	0.010	"	0.200	0.00309	101	70-130				
o-Xylene	0.107	0.0050	"	0.100	ND	107	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0400		101	23-173				
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170				
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	21-167				

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/18/20 18:35

**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 BDJ0214 - EPA 5030 Soil MS**

Matrix Spike Dup (BDJ0214-MSD1)	Source: 2010212-01			Prepared: 10/16/20 Analyzed: 10/17/20						
Benzene	0.0848	0.0020	mg/kg	0.100	ND	84.8	70-130	0.142	30	
Toluene	0.0785	0.0050	"	0.100	ND	78.5	70-130	0.913	30	
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	0.411	30	
m,p-Xylene	0.208	0.010	"	0.200	0.00309	102	70-130	1.43	30	
o-Xylene	0.109	0.0050	"	0.100	ND	109	70-130	1.81	30	
Surrogate: 1,2-Dichloroethane-d4	0.0401		"	0.0400		100	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.3	21-167			

Summit Scientific

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



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

Project: Plumb 2&3

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/18/20 18:35

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

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

**Batch BDJ0215 - EPA 3550A**

**Blank (BDJ0215-BLK1)**

Prepared: 10/16/20 Analyzed: 10/17/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (BDJ0215-BS1)**

Prepared: 10/16/20 Analyzed: 10/17/20

C10-C28 (DRO) 648 50 mg/kg 500 130 70-130

**Matrix Spike (BDJ0215-MS1)**

Source: 2010212-01

Prepared: 10/16/20 Analyzed: 10/17/20

C10-C28 (DRO) 607 50 mg/kg 500 43.4 113 70-130

**Matrix Spike Dup (BDJ0215-MSD1)**

Source: 2010212-01

Prepared: 10/16/20 Analyzed: 10/17/20

C10-C28 (DRO) 582 50 mg/kg 500 43.4 108 70-130 4.14 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: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/18/20 18:35

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 20, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000


Denver, CO 80203

RE: Plumb 2&3

Work Order #2010225

Enclosed are the results of analyses for samples received by Summit Scientific on 10/19/20 17:11. 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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/20/20 17:06

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS26@6'	2010225-01	Soil	10/19/20 13:10	10/19/20 17:11
SS27@4'	2010225-02	Soil	10/19/20 13:15	10/19/20 17:11
SS28@8'	2010225-03	Soil	10/19/20 13:20	10/19/20 17:11
SS29@8'	2010225-04	Soil	10/19/20 14:45	10/19/20 17:11

Summit Scientific

*The results in 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>

2010225

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: Plumb 2 & 3  
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	\$260 BTEX	\$260B GBTEXN	\$015 DRO		pH/EC
1	SS26 @6'	10/19/20	1310	1			X						X	X			
2	SS27 @4'		1315	1													
3	SS28 @8'		1320	1													
4	SS29 @8'		1445	1													
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <u>[Signature]</u> Date/Time: 10/19/20 1550	Received by: <u>[Signature]</u> Tasman's Lock Box Date/Time: 10/19/2020 1550	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> Date/Time:	Received by: Date/Time:	Sample Integrity: Temperature Upon Receipt: <u>3.9</u> 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 2010225

Client: DDC/TABMAN Client Project ID: PLUMB 2#3

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>3.9</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"/>	<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.

DD  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

10/19/2020  
Date/Time



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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/20/20 17:06

**SS26@6'**  
**2010225-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/19/20 13:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0220	10/19/20	10/19/20	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: **10/19/20 13:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		118 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/20 13:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0218	10/19/20	10/19/20	EPA 8015M	

Date Sampled: **10/19/20 13:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		95.8 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/20 17:06

**SS27@4'**  
**2010225-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/19/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0220	10/19/20	10/19/20	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: **10/19/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0218	10/19/20	10/19/20	EPA 8015M	

Date Sampled: **10/19/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		90.3 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/20 17:06

**SS28@8'**  
**2010225-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/19/20 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0220	10/19/20	10/19/20	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: **10/19/20 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		96.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/20 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0218	10/19/20	10/19/20	EPA 8015M	

Date Sampled: **10/19/20 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		97.6 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/20 17:06

**SS29@8'**  
**2010225-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/19/20 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0220	10/19/20	10/19/20	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: **10/19/20 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		90.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/20 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0218	10/19/20	10/19/20	EPA 8015M	

Date Sampled: **10/19/20 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		97.5 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/20 17:06

**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 BDJ0220 - EPA 5030 Soil MS**

**Blank (BDJ0220-BLK1)**

Prepared & Analyzed: 10/19/20

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	0.0351		"	0.0400		87.8	23-173				
Surrogate: Toluene-d8	0.0374		"	0.0400		93.6	20-170				
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167				

**LCS (BDJ0220-BS1)**

Prepared & Analyzed: 10/19/20

Benzene	0.126	0.0020	mg/kg	0.150		83.9	70-130				
Toluene	0.126	0.0050	"	0.150		84.3	70-130				
Ethylbenzene	0.127	0.0050	"	0.150		84.9	70-130				
m,p-Xylene	0.259	0.010	"	0.300		86.5	70-130				
o-Xylene	0.136	0.0050	"	0.150		90.5	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0374		"	0.0400		93.5	23-173				
Surrogate: Toluene-d8	0.0374		"	0.0400		93.4	20-170				
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	21-167				

**Matrix Spike (BDJ0220-MS1)**

Source: 2010209-01

Prepared & Analyzed: 10/19/20

Benzene	0.141	0.0020	mg/kg	0.150	ND	93.9	70-130				
Toluene	0.125	0.0050	"	0.150	ND	83.1	70-130				
Ethylbenzene	0.114	0.0050	"	0.150	ND	76.0	70-130				
m,p-Xylene	0.235	0.010	"	0.300	ND	78.5	70-130				
o-Xylene	0.121	0.0050	"	0.150	ND	80.6	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0400		103	23-173				
Surrogate: Toluene-d8	0.0389		"	0.0400		97.4	20-170				
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	21-167				

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/20/20 17:06

**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 BDJ0220 - EPA 5030 Soil MS**

Matrix Spike Dup (BDJ0220-MSD1)	Source: 2010209-01			Prepared & Analyzed: 10/19/20						
Benzene	0.145	0.0020	mg/kg	0.150	ND	96.6	70-130	2.85	30	
Toluene	0.139	0.0050	"	0.150	ND	92.4	70-130	10.6	30	
Ethylbenzene	0.108	0.0050	"	0.150	ND	72.3	70-130	4.99	30	
m,p-Xylene	0.219	0.010	"	0.300	ND	73.1	70-130	7.14	30	
o-Xylene	0.118	0.0050	"	0.150	ND	78.6	70-130	2.49	30	
Surrogate: 1,2-Dichloroethane-d4	0.0455		"	0.0400		114	23-173			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	21-167			

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/20/20 17:06

**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 BDJ0218 - EPA 3550A**

**Blank (BDJ0218-BLK1)**

Prepared & Analyzed: 10/19/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (BDJ0218-BS1)**

Prepared & Analyzed: 10/19/20

C10-C28 (DRO) 553 50 mg/kg 500 111 70-130

**Matrix Spike (BDJ0218-MS1)**

Source: 2010224-02

Prepared & Analyzed: 10/19/20

C10-C28 (DRO) 621 50 mg/kg 500 45.9 115 70-130

**Matrix Spike Dup (BDJ0218-MSD1)**

Source: 2010224-02

Prepared & Analyzed: 10/19/20

C10-C28 (DRO) 645 50 mg/kg 500 45.9 120 70-130 3.86 20

Summit Scientific

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

Project: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/20 17:06

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 21, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000


Denver, CO 80203

RE: Plumb 2&3

Work Order #2010247

Enclosed are the results of analyses for samples received by Summit Scientific on 10/20/20 15:10. 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 'M' and 'P'.

Muri Premer For Paul Shrewsbury

President



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

Project: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/21/20 16:26

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS30@4'	2010247-01	Soil	10/20/20 12:20	10/20/20 15:10
SS31@6'	2010247-02	Soil	10/20/20 12:25	10/20/20 15:10
SS32@4'	2010247-03	Soil	10/20/20 12:55	10/20/20 15:10
SS33@6'	2010247-04	Soil	10/20/20 13:00	10/20/20 15:10
SS34@8'	2010247-05	Soil	10/20/20 13:20	10/20/20 15:10
SS35@8'	2010247-06	Soil	10/20/20 13:25	10/20/20 15:10
SS36@8'	2010247-07	Soil	10/20/20 13:30	10/20/20 15:10

Summit Scientific

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# Summit Scientific

S<sub>2</sub>

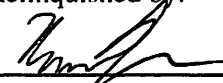
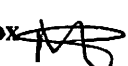
2010247

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: Plumb 2 & 3  
Sampler Name: Max Dahlgrin 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	
1	SS30 @ 4'	10/20/20	1220	1			X			X			X	X		
2	SS31 @ 6'		1225													
3	SS32 @ 4'		1255													
4	SS33 @ 6'		1300													
5	SS34 @ 8'		1320													
6	SS35 @ 8'		1325													
7	SS36 @ 8'		1330													
8	<del>SS37 @ 8'</del> MP															
9																
10																

Relinquished by: 	Date/Time: 10/20/20 1510	Received by: 	Date/Time: 10-20-20 15:10	<b>Turn Around Time (Check)</b> Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ <b>Sample Integrity:</b> Temperature Upon Receipt: <u>3.7</u> Samples Intact: <input checked="" type="radio"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 2010247

Client: POC/TASMAN Client Project ID: Plumb 2 & 3

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>3.7</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"/>	<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.

RT  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

10/20/2020  
Date/Time



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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/21/20 16:26

**SS30@4'**  
**2010247-01 (Soil)**

**Summit Scientific**

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0253	10/20/20	10/20/20	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: **10/20/20 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		91.0 %		23-173	"	"	"	"	
Surrogate: Toluene-d8		97.0 %		20-170	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %		21-167	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0254	"	10/20/20	EPA 8015M	

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		89.0 %		30-150	"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/21/20 16:26

**SS31@6'**  
**2010247-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/20/20 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0253	10/20/20	10/20/20	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: **10/20/20 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		88.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.5 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/20/20 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0254	"	10/20/20	EPA 8015M	

Date Sampled: **10/20/20 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		62.0 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/21/20 16:26

**SS32@4'**  
**2010247-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/20/20 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0253	10/20/20	10/20/20	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: **10/20/20 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		86.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.2 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/20/20 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0254	"	10/20/20	EPA 8015M	

Date Sampled: **10/20/20 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		89.2 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/21/20 16:26

**SS33@6'**  
**2010247-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/20/20 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0253	10/20/20	10/20/20	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: **10/20/20 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/20/20 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0254	"	10/20/20	EPA 8015M	

Date Sampled: **10/20/20 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		80.0 %	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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/21/20 16:26

**SS34@8'**  
**2010247-05 (Soil)**

**Summit Scientific**

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0253	10/20/20	10/20/20	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: **10/20/20 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		92.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0254	"	10/20/20	EPA 8015M	

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		95.0 %	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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/21/20 16:26

**SS35@8'**  
**2010247-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/20/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0253	10/20/20	10/20/20	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: **10/20/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/20/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0254	"	10/20/20	EPA 8015M	

Date Sampled: **10/20/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.0 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/21/20 16:26

**SS36@8'**  
**2010247-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/20/20 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0253	10/20/20	10/20/20	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: **10/20/20 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		114 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/20/20 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0254	"	10/20/20	EPA 8015M	

Date Sampled: **10/20/20 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		95.2 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/21/20 16:26

**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 BDJ0253 - EPA 5030 Soil MS**

**Blank (BDJ0253-BLK1)**

Prepared & Analyzed: 10/20/20

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	0.0354		"	0.0400		88.4		23-173		
Surrogate: Toluene-d8	0.0359		"	0.0400		89.7		20-170		
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103		21-167		

**LCS (BDJ0253-BS1)**

Prepared & Analyzed: 10/20/20

Benzene	0.0789	0.0020	mg/kg	0.100		78.9		70-130		
Toluene	0.0781	0.0050	"	0.100		78.1		70-130		
Ethylbenzene	0.0927	0.0050	"	0.100		92.7		70-130		
m,p-Xylene	0.196	0.010	"	0.200		98.0		70-130		
o-Xylene	0.103	0.0050	"	0.100		103		70-130		
Surrogate: 1,2-Dichloroethane-d4	0.0366		"	0.0400		91.4		23-173		
Surrogate: Toluene-d8	0.0400		"	0.0400		100		20-170		
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101		21-167		

**Matrix Spike (BDJ0253-MS1)**

Source: 2010245-01

Prepared & Analyzed: 10/20/20

Benzene	0.0784	0.0020	mg/kg	0.100	ND	78.4		70-130		
Toluene	0.0733	0.0050	"	0.100	ND	73.3		70-130		
Ethylbenzene	0.101	0.0050	"	0.100	ND	101		70-130		
m,p-Xylene	0.212	0.010	"	0.200	0.0105	101		70-130		
o-Xylene	0.115	0.0050	"	0.100	0.00594	109		70-130		
Surrogate: 1,2-Dichloroethane-d4	0.0368		"	0.0400		92.0		23-173		
Surrogate: Toluene-d8	0.0372		"	0.0400		93.1		20-170		
Surrogate: 4-Bromofluorobenzene	0.0442		"	0.0400		110		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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/21/20 16:26

**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 BDJ0253 - EPA 5030 Soil MS**

Matrix Spike Dup (BDJ0253-MSD1)	Source: 2010245-01			Prepared & Analyzed: 10/20/20						
Benzene	0.0768	0.0020	mg/kg	0.100	ND	76.8	70-130	2.09	30	
Toluene	0.0758	0.0050	"	0.100	ND	75.8	70-130	3.38	30	
Ethylbenzene	0.0961	0.0050	"	0.100	ND	96.1	70-130	5.41	30	
m,p-Xylene	0.203	0.010	"	0.200	0.0105	96.3	70-130	4.42	30	
o-Xylene	0.109	0.0050	"	0.100	0.00594	103	70-130	5.84	30	
Surrogate: 1,2-Dichloroethane-d4	0.0386		"	0.0400		96.4	23-173			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0430		"	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: Plumb 2&3

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/21/20 16:26

**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 BDJ0254 - EPA 3550A**

**Blank (BDJ0254-BLK1)**

Prepared & Analyzed: 10/20/20

C10-C28 (DRO)      ND      50    mg/kg

**LCS (BDJ0254-BS1)**

Prepared & Analyzed: 10/20/20

C10-C28 (DRO)      594      50    mg/kg      500      119    70-130

**Matrix Spike (BDJ0254-MS1)**

**Source: 2010245-01**

Prepared & Analyzed: 10/20/20

C10-C28 (DRO)      622      50    mg/kg      500      45.3    115    70-130

**Matrix Spike Dup (BDJ0254-MSD1)**

**Source: 2010245-01**

Prepared & Analyzed: 10/20/20

C10-C28 (DRO)      610      50    mg/kg      500      45.3    113    70-130    1.99    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: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/21/20 16:26

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 22, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Plumb 2&3

Work Order #2010260

Enclosed are the results of analyses for samples received by Summit Scientific on 10/21/20 16:00. 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: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS37@4'	2010260-01	Soil	10/21/20 09:00	10/21/20 16:00
SS38@6'	2010260-02	Soil	10/21/20 09:05	10/21/20 16:00
SS39@8'	2010260-03	Soil	10/21/20 09:10	10/21/20 16:00
SS40@4'	2010260-04	Soil	10/21/20 09:15	10/21/20 16:00
SS41@6'	2010260-05	Soil	10/21/20 09:20	10/21/20 16:00
SS42@8'	2010260-06	Soil	10/21/20 09:25	10/21/20 16:00
SS43@4'	2010260-07	Soil	10/21/20 13:20	10/21/20 16:00
SS44@6'	2010260-08	Soil	10/21/20 13:25	10/21/20 16:00
SS45@8'	2010260-09	Soil	10/21/20 13:45	10/21/20 16:00
SS46@4'	2010260-10	Soil	10/21/20 14:40	10/21/20 16:00
SS47@6'	2010260-11	Soil	10/21/20 14:45	10/21/20 16:00

Summit Scientific

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

# Summit Scientific

2010260.1

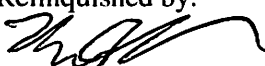

S<sub>2</sub>

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

Page 1 of 2

Client: PDC / Tasman	Project Manager: Mark Longhurst
Address: 6855 W 119th Ave	E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020	
Phone: 303-487-1228	Project Name: <u>Plumb 2 &amp; 3</u>
Sampler Name: <u>Max Dahlgren</u>	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	SS37 @ 4'	10/21/20	900	1			X			X				X	X			
2	SS38 @ 6'		905															
3	SS39 @ 8'		910															
4	SS40 @ 4'		915															
5	SS41 @ 6'		926															
6	SS42 @ 8'		925															
7	SS43 @ 4'		1320															
8	SS44 @ 6'		1325															
9	SS45 @ 8'		1345															
10	SS46 @ 4'		1440															

Relinquished by: 	Date/Time: 10/21/20 1600	Received by: 	Date/Time: 10-21-20 16:00	<b>Turn Around Time (Check)</b> Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ <b>Sample Integrity:</b> Temperature Upon Receipt: <u>5.0</u> Samples Intact: <input checked="" type="radio"/> Yes No	<b>Notes:</b>  ON ICE
Relinquished by: Tasman's Lock Box	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		



### Sample Receipt Checklist

S2 Work Order 2010260

Client: PDC/Tasman Client Project ID: Plum 2&3

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

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

Temp (°C)	5.6
-----------	-----

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"/>	On Ice
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"/>	Same Day TAT
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>				

MP  
Custodian Printed Name or Initials

*Muri Premer*  
Signature of Custodian

10/21/20  
Date/Time



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

Project: Plumb 2&3

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/22/20 05:37

**SS37@4'**  
**2010260-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/21/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BDJ0283	10/21/20	10/21/20	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: **10/21/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		87.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/21/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BDJ0284	10/21/20	10/21/20	EPA 8015M	

Date Sampled: **10/21/20 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		86.7 %		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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

**SS38@6'**  
**2010260-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/21/20 09:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0283	10/21/20	10/21/20	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: **10/21/20 09:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		90.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/21/20 09:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0284	10/21/20	10/21/20	EPA 8015M	

Date Sampled: **10/21/20 09:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		91.0 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

**SS39@8'**  
**2010260-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/21/20 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0283	10/21/20	10/21/20	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: **10/21/20 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		85.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/21/20 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0284	10/21/20	10/21/20	EPA 8015M	

Date Sampled: **10/21/20 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		86.9 %	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: Plumb 2&3

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/22/20 05:37

**SS40@4'**  
**2010260-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/21/20 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0283	10/21/20	10/21/20	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: **10/21/20 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/21/20 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0284	10/21/20	10/21/20	EPA 8015M	

Date Sampled: **10/21/20 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		87.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

**SS41@6'**  
**2010260-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/21/20 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0283	10/21/20	10/21/20	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: **10/21/20 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		94.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/21/20 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0284	10/21/20	10/21/20	EPA 8015M	

Date Sampled: **10/21/20 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		91.8 %	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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

**SS42@8'**  
**2010260-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/21/20 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0283	10/21/20	10/21/20	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: **10/21/20 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/21/20 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0284	10/21/20	10/21/20	EPA 8015M	

Date Sampled: **10/21/20 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		87.6 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

**SS43@4'**  
**2010260-07 (Soil)**

**Summit Scientific**

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0283	10/21/20	10/21/20	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: **10/21/20 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		88.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0284	10/21/20	10/21/20	EPA 8015M	

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		92.8 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

**SS44@6'**  
**2010260-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/21/20 13:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0283	10/21/20	10/21/20	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: **10/21/20 13:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		86.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.3 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/21/20 13:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0284	10/21/20	10/21/20	EPA 8015M	

Date Sampled: **10/21/20 13:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		87.4 %	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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

**SS45@8'**  
**2010260-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/21/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0283	10/21/20	10/21/20	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: **10/21/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		89.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.3 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/21/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0284	10/21/20	10/21/20	EPA 8015M	

Date Sampled: **10/21/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		93.1 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

**SS46@4'**  
**2010260-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/21/20 14:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0283	10/21/20	10/21/20	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: **10/21/20 14:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/21/20 14:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0284	10/21/20	10/21/20	EPA 8015M	

Date Sampled: **10/21/20 14:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		85.1 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

**SS47@6'**  
**2010260-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/21/20 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0283	10/21/20	10/21/20	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: **10/21/20 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.8 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/21/20 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0284	10/21/20	10/22/20	EPA 8015M	

Date Sampled: **10/21/20 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		88.5 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

### 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 BDJ0283 - EPA 5030 Soil MS

##### Blank (BDJ0283-BLK1)

Prepared & Analyzed: 10/21/20

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	0.0343		"	0.0400		85.8	23-173				
Surrogate: Toluene-d8	0.0396		"	0.0400		99.1	20-170				
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	21-167				

##### LCS (BDJ0283-BS1)

Prepared & Analyzed: 10/21/20

Benzene	0.0806	0.0020	mg/kg	0.100		80.6	70-130				
Toluene	0.0800	0.0050	"	0.100		80.0	70-130				
Ethylbenzene	0.0966	0.0050	"	0.100		96.6	70-130				
m,p-Xylene	0.199	0.010	"	0.200		99.3	70-130				
o-Xylene	0.104	0.0050	"	0.100		104	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0350		"	0.0400		87.6	23-173				
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170				
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	21-167				

##### Matrix Spike (BDJ0283-MS1)

Source: 2010260-01

Prepared & Analyzed: 10/21/20

Benzene	0.0794	0.0020	mg/kg	0.100	ND	79.4	70-130				
Toluene	0.0805	0.0050	"	0.100	ND	80.5	70-130				
Ethylbenzene	0.0974	0.0050	"	0.100	ND	97.4	70-130				
m,p-Xylene	0.202	0.010	"	0.200	0.00327	99.6	70-130				
o-Xylene	0.109	0.0050	"	0.100	ND	109	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0362		"	0.0400		90.4	23-173				
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170				
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		103	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: Plumb 2&3

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/22/20 05:37

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

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

**Batch BDJ0283 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BDJ0283-MSD1)</b>	<b>Source: 2010260-01</b>			<b>Prepared &amp; Analyzed: 10/21/20</b>						
Benzene	0.0797	0.0020	mg/kg	0.100	ND	79.7	70-130	0.415	30	
Toluene	0.0816	0.0050	"	0.100	ND	81.6	70-130	1.41	30	
Ethylbenzene	0.0995	0.0050	"	0.100	ND	99.5	70-130	2.19	30	
m,p-Xylene	0.206	0.010	"	0.200	0.00327	101	70-130	1.85	30	
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130	2.56	30	
Surrogate: 1,2-Dichloroethane-d4	0.0361		"	0.0400		90.2	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	21-167			

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/22/20 05:37

**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 BDJ0284 - EPA 3550A**

**Blank (BDJ0284-BLK1)**

Prepared: 10/21/20 Analyzed: 10/22/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (BDJ0284-BS1)**

Prepared: 10/21/20 Analyzed: 10/22/20

C10-C28 (DRO) 622 50 mg/kg 500 124 70-130

**Matrix Spike (BDJ0284-MS1)**

Source: 2010260-01

Prepared: 10/21/20 Analyzed: 10/22/20

C10-C28 (DRO) 562 50 mg/kg 500 41.1 104 70-130

**Matrix Spike Dup (BDJ0284-MSD1)**

Source: 2010260-01

Prepared: 10/21/20 Analyzed: 10/22/20

C10-C28 (DRO) 573 50 mg/kg 500 41.1 106 70-130 1.93 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: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/22/20 05:37

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 23, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

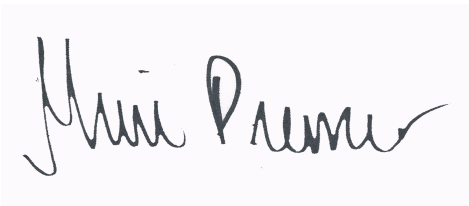
Denver, CO 80203

RE: Plumb 2&3

Work Order #2010277

Enclosed are the results of analyses for samples received by Summit Scientific on 10/22/20 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Paul Shrewsbury  
President



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

Project: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/23/20 17:34

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS48@8'	2010277-01	Soil	10/22/20 11:30	10/22/20 17:00
SS49@4'	2010277-02	Soil	10/22/20 13:30	10/22/20 17:00
SS50@6'	2010277-03	Soil	10/22/20 13:35	10/22/20 17:00
SS51@4'	2010277-04	Soil	10/22/20 13:40	10/22/20 17:00
SS52@6'	2010277-05	Soil	10/22/20 13:45	10/22/20 17:00
SS53@8'	2010277-06	Soil	10/22/20 13:50	10/22/20 17:00
SS54@4'	2010277-07	Soil	10/22/20 14:50	10/22/20 17:00
SS55@6'	2010277-08	Soil	10/22/20 14:55	10/22/20 17:00
SS56@8'	2010277-09	Soil	10/22/20 15:00	10/22/20 17:00
SS57@8'	2010277-10	Soil	10/22/20 15:05	10/22/20 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

S<sub>2</sub>

2010277

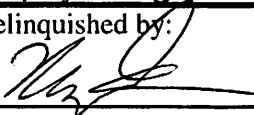

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310

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: Plumb 2 & 3  
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	\$260 BTEX	\$260B GBTEXN	\$015 DRO	
1	SS48 @ 8'	10/22/20	1130	1			X			X			X	X		
2	SS49 @ 4'		1330													
3	SS50 @ 6'		1335													
4	SS51 @ 4'		1340													
5	SS52 @ 6'		1345													
6	SS53 @ 8'		1350													
7	SS54 @ 4'		1450													
8	SS55 @ 6'		1455													
9	SS56 @ 8'		1500													
10	SS57 @ 8'		1505													

Relinquished by: 	Date/Time: 10/22/20 1610	Received by: 	Date/Time: 10/22/2020 1610	<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>3.4</u> Samples Intact: <input checked="" type="checkbox"/> Yes No	<b>Notes:</b>
Relinquished by: <b>Tasman's Lock Box</b>	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 2010277

Client: POC/FARMAN Client Project ID: Plumb 2's

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>3.4</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"/>	<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.

POC  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

10/22/2020  
Date/Time



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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/23/20 17:34

**SS48@8'**  
**2010277-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/22/20 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0304	10/22/20	10/22/20	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: **10/22/20 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		98.4 %		23-173	"	"	"	"	
Surrogate: Toluene-d8		95.2 %		20-170	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		21-167	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/22/20 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0305	10/22/20	10/22/20	EPA 8015M	

Date Sampled: **10/22/20 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		90.4 %		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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/23/20 17:34

**SS49@4'**  
**2010277-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/22/20 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0304	10/22/20	10/22/20	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: **10/22/20 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		92.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/22/20 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0305	10/22/20	10/22/20	EPA 8015M	

Date Sampled: **10/22/20 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		96.5 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/23/20 17:34

**SS50@6'**  
**2010277-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/22/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0304	10/22/20	10/22/20	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: **10/22/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/22/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0305	10/22/20	10/22/20	EPA 8015M	

Date Sampled: **10/22/20 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.8 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/23/20 17:34

**SS51@4'**  
**2010277-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/22/20 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0304	10/22/20	10/22/20	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: **10/22/20 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		94.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/22/20 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0305	10/22/20	10/22/20	EPA 8015M	

Date Sampled: **10/22/20 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		91.5 %	30-150		"	"	"	"	

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/23/20 17:34

**SS52@6'**  
**2010277-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/22/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0304	10/22/20	10/22/20	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: **10/22/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		91.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/22/20 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0305	10/22/20	10/22/20	EPA 8015M	

Date Sampled: **10/22/20 13:45**

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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/23/20 17:34

**SS53@8'**  
**2010277-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/22/20 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0304	10/22/20	10/22/20	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: **10/22/20 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		94.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/22/20 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0305	10/22/20	10/22/20	EPA 8015M	

Date Sampled: **10/22/20 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		94.1 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/23/20 17:34

**SS54@4'**  
**2010277-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/22/20 14:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BDJ0304	10/22/20	10/22/20	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: **10/22/20 14:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		95.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/22/20 14:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0305	10/22/20	10/22/20	EPA 8015M	

Date Sampled: **10/22/20 14:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		99.6 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/23/20 17:34

**SS55@6'**  
**2010277-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/22/20 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.0094</b>	0.0020	mg/kg	1	BDJ0304	10/22/20	10/22/20	EPA 8260B	
<b>Toluene</b>	<b>0.031</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.036</b>	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.58</b>	0.50	"	"	"	"	"	"	

Date Sampled: **10/22/20 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/22/20 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0305	10/22/20	10/22/20	EPA 8015M	

Date Sampled: **10/22/20 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.8 %	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: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/23/20 17:34

**SS56@8'**  
**2010277-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/22/20 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.019</b>	0.0020	mg/kg	1	BDJ0304	10/22/20	10/22/20	EPA 8260B	
<b>Toluene</b>	<b>0.062</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.053</b>	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.71</b>	0.50	"	"	"	"	"	"	

Date Sampled: **10/22/20 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/22/20 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0305	10/22/20	10/22/20	EPA 8015M	

Date Sampled: **10/22/20 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/23/20 17:34

**SS57@8'**  
**2010277-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/22/20 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BDJ0304	10/22/20	10/22/20	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: **10/22/20 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/22/20 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BDJ0305	10/22/20	10/22/20	EPA 8015M	

Date Sampled: **10/22/20 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/23/20 17:34

### 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 BDJ0304 - EPA 5030 Soil MS

##### Blank (BDJ0304-BLK1)

Prepared: 10/22/20 Analyzed: 10/23/20

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	0.0363		"	0.0400		90.8		23-173		
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0		20-170		
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107		21-167		

##### LCS (BDJ0304-BS1)

Prepared: 10/22/20 Analyzed: 10/23/20

Benzene	0.0780	0.0020	mg/kg	0.100		78.0		70-130		
Toluene	0.0790	0.0050	"	0.100		79.0		70-130		
Ethylbenzene	0.0916	0.0050	"	0.100		91.6		70-130		
m,p-Xylene	0.190	0.010	"	0.200		94.9		70-130		
o-Xylene	0.101	0.0050	"	0.100		101		70-130		
Surrogate: 1,2-Dichloroethane-d4	0.0375		"	0.0400		93.8		23-173		
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4		20-170		
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		105		21-167		

##### Matrix Spike (BDJ0304-MS1)

Source: 2010277-01

Prepared: 10/22/20 Analyzed: 10/23/20

Benzene	0.0785	0.0020	mg/kg	0.100	ND	78.5		70-130		
Toluene	0.0802	0.0050	"	0.100	ND	80.2		70-130		
Ethylbenzene	0.0943	0.0050	"	0.100	ND	94.3		70-130		
m,p-Xylene	0.197	0.010	"	0.200	0.00357	96.9		70-130		
o-Xylene	0.104	0.0050	"	0.100	ND	104		70-130		
Surrogate: 1,2-Dichloroethane-d4	0.0374		"	0.0400		93.5		23-173		
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6		20-170		
Surrogate: 4-Bromofluorobenzene	0.0419		"	0.0400		105		21-167		

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/23/20 17:34

**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 BDJ0304 - EPA 5030 Soil MS**

Matrix Spike Dup (BDJ0304-MSD1)	Source: 2010277-01			Prepared: 10/22/20 Analyzed: 10/23/20					
Benzene	0.0773	0.0020	mg/kg	0.100	ND	77.3	70-130	1.54	30
Toluene	0.0778	0.0050	"	0.100	ND	77.8	70-130	2.96	30
Ethylbenzene	0.0925	0.0050	"	0.100	ND	92.5	70-130	1.86	30
m,p-Xylene	0.193	0.010	"	0.200	0.00357	94.6	70-130	2.32	30
o-Xylene	0.104	0.0050	"	0.100	ND	104	70-130	0.576	30
Surrogate: 1,2-Dichloroethane-d4	0.0374		"	0.0400		93.5	23-173		
Surrogate: Toluene-d8	0.0390		"	0.0400		97.6	20-170		
Surrogate: 4-Bromofluorobenzene	0.0424		"	0.0400		106	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: Plumb 2&3

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/23/20 17:34

**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 BDJ0305 - EPA 3550A**

**Blank (BDJ0305-BLK1)**

Prepared: 10/22/20 Analyzed: 10/23/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (BDJ0305-BS1)**

Prepared: 10/22/20 Analyzed: 10/23/20

C10-C28 (DRO) 645 50 mg/kg 500 129 70-130

**Matrix Spike (BDJ0305-MS1)**

Source: 2010277-01

Prepared: 10/22/20 Analyzed: 10/23/20

C10-C28 (DRO) 606 50 mg/kg 500 35.7 114 70-130

**Matrix Spike Dup (BDJ0305-MSD1)**

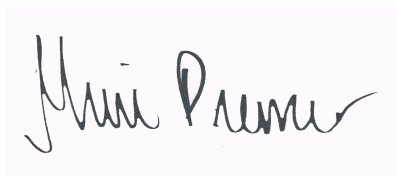
Source: 2010277-01

Prepared: 10/22/20 Analyzed: 10/23/20

C10-C28 (DRO) 585 50 mg/kg 500 35.7 110 70-130 3.49 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: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/23/20 17:34

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 27, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Plumb 2&3

Work Order #2010314

Enclosed are the results of analyses for samples received by Summit Scientific on 10/26/20 10:30. 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: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/27/20 09:55

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	2010314-01	Water	10/26/20 09:00	10/26/20 10:30

---

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>

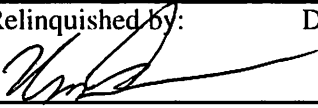

2010314

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: Plumb 2:3  
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	\$260 BTEX	\$260B GBTEXN	\$015 DRO	pH/EC		
1	GW01	10/26/20	900	3	X				X				X					
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: 	Date/Time: 10/26/20 1030	Received by: 	Date/Time: 10/26/2020 030	<b>Turn Around Time (Check)</b> Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ <b>Sample Integrity:</b> Temperature Upon Receipt: <u>3.2</u> Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Notes:</b>
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 2010314

Client: JDC/TABMAN Client Project ID: Plumb 2e3

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

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

Temp (°C)	<u>3.2</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"/>	<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 checked="" type="checkbox"/>	<input 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>HCl</u>
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.

JDC  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

10/26/2020  
Date/Time



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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 10/27/20 09:55

**GW01**  
**2010314-01 (Water)**

**Summit Scientific**

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

Date Sampled: **10/26/20 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>150</b>	1.0	ug/l	1	BDJ0313	10/26/20	10/26/20	EPA 8260B	
<b>Toluene</b>	<b>720</b>	100	"	100	"	"	10/26/20	"	
<b>Ethylbenzene</b>	<b>20</b>	1.0	"	1	"	"	10/26/20	"	
<b>Xylenes (total)</b>	<b>290</b>	2.0	"	"	"	"	"	"	

Date Sampled: **10/26/20 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Plumb 2&3

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/27/20 09:55

### 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 BDJ0313 - EPA 5030 Water MS

##### Blank (BDJ0313-BLK1)

Prepared & Analyzed: 10/26/20

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Surrogate: 1,2-Dichloroethane-d4	11.9		"	13.3		89.0		23-173			
Surrogate: Toluene-d8	14.5		"	13.3		109		20-170			
Surrogate: 4-Bromofluorobenzene	14.6		"	13.3		110		21-167			

##### LCS (BDJ0313-BS1)

Prepared & Analyzed: 10/26/20

Benzene	27.8	1.0	ug/l	33.3		83.3		51-132			
Toluene	32.3	1.0	"	33.3		96.8		51-138			
Ethylbenzene	31.6	1.0	"	33.3		94.9		58-146			
m,p-Xylene	65.0	2.0	"	66.7		97.5		57-144			
o-Xylene	35.1	1.0	"	33.3		105		53-146			
Surrogate: 1,2-Dichloroethane-d4	12.0		"	13.3		89.9		23-173			
Surrogate: Toluene-d8	14.3		"	13.3		107		20-170			
Surrogate: 4-Bromofluorobenzene	14.5		"	13.3		109		21-167			

##### Matrix Spike (BDJ0313-MS1)

Source: 2010290-01

Prepared & Analyzed: 10/26/20

Benzene	17.4	1.0	ug/l	33.3	ND	52.1		34-141			
Toluene	31.2	1.0	"	33.3	ND	93.8		27-151			
Ethylbenzene	31.7	1.0	"	33.3	ND	95.1		29-160			
m,p-Xylene	66.9	2.0	"	66.7	ND	100		20-166			
o-Xylene	35.9	1.0	"	33.3	ND	108		33-159			
Surrogate: 1,2-Dichloroethane-d4	12.1		"	13.3		90.8		23-173			
Surrogate: Toluene-d8	13.9		"	13.3		104		20-170			
Surrogate: 4-Bromofluorobenzene	14.4		"	13.3		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: Plumb 2&3

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/27/20 09:55

**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 BDJ0313 - EPA 5030 Water MS**

<b>Matrix Spike Dup (BDJ0313-MSD1)</b>	<b>Source: 2010290-01</b>			<b>Prepared &amp; Analyzed: 10/26/20</b>						
Benzene	18.1	1.0	ug/l	33.3	ND	54.2	34-141	3.89	30	
Toluene	32.9	1.0	"	33.3	ND	98.8	27-151	5.27	30	
Ethylbenzene	32.0	1.0	"	33.3	ND	95.9	29-160	0.848	30	
m,p-Xylene	66.6	2.0	"	66.7	ND	99.9	20-166	0.464	30	
o-Xylene	36.1	1.0	"	33.3	ND	108	33-159	0.639	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>13.8</i>		<i>"</i>	<i>13.3</i>		<i>103</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>14.0</i>		<i>"</i>	<i>13.3</i>		<i>105</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>14.2</i>		<i>"</i>	<i>13.3</i>		<i>107</i>	<i>21-167</i>			

Summit Scientific

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

Project: Plumb 2&3  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/27/20 09:55

### 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