

TABLE 1
UHRICH 13-29 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH ⁽²⁾ (mg/kg)
COGCC standards for soil (mg/kg) ⁽¹⁾			0.17	85	100	175	23	500
SS01 @ 13'	4/6/2017	13	1.4	7.6	1.8	29	0.58	1,520
SS02 @ 20'	4/10/2017	20	1.9	12	8.1	55	1.6	3,800
SS03 @ 12'	4/14/2017	12	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS04 @ 22'	4/14/2017	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS05 @ 12'	4/14/2017	12	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS06 @ 22'	4/14/2017	22	0.010	0.0060	<0.0050	<0.010	<0.010	<50
SS07 @ 13'	4/17/2017	13	0.73	1.6	3.8	16	0.39	2,800
SS08 @ 22'	4/17/2017	22	0.39	11	3.3	25	0.28	1,290
SS09 @ 12'	4/17/2017	12	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS10 @ 22	4/17/2017	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS11 @ 12'	4/17/2017	12	<0.0020	<0.0050	<0.0050	<0.010	<0.010	0.50
SS12 @ 22'	4/17/2017	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS13 @ 12'	4/17/2017	12	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS14 @ 22'	4/17/2017	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS15 @ 12'	4/17/2017	12	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS16 @ 22'	4/17/2017	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS17 @ 12'	4/17/2017	12	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS18 @ 22'	4/17/2017	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS19 @ 12'	4/18/2017	12	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS20 @ 22'	4/18/2017	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50

Notes:

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 30, 2015.

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

bgs = Below ground surface

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

TABLE 2
UHRICH 13-29 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 (feet bgs) ⁽²⁾
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	
GW01	5/1/2017	3.2	1.8	<1.0	4.3	~24

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective January 30, 2015.

2. Depth to groundwater measured from ground surface.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L= Micrograms per liter

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 06, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Uhrich 13-29

Enclosed are the results of analyses for samples received by Summit Scientific on 04/06/17 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ben Shrewsbury', with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury
Laboratory Manager



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/06/17 22:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@13'	1704050-01	Soil	04/06/17 11:53	04/06/17 17:10

Summit Scientific

A handwritten signature in black ink, appearing to be 'Mark Longhurst', written over a horizontal line.

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: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/06/17 22:15

Sample Receipt Checklist

S2 Work Order: 1704050

Client: PDC Client Project ID: Uhrich 13-29

Shipped Via: P/U Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

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

Cooler ID					
Temp (°C)	<u>5.0</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

4/6/17 1710
Date/Time



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

Project: Urich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/06/17 22:15

SS01@13'
1704050-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 04/06/17 11:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	620	50	mg/kg	1	1704069	04/06/17	04/06/17	8015M	

Date Sampled: 04/06/17 11:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 04/06/17 11:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.58	0.010	mg/kg	1	1704070	04/06/17	04/06/17	EPA 8260B	
Benzene	1.4	0.20	"	100	"	"	04/06/17	"	
Toluene	7.6	0.50	"	"	"	"	"	"	
Ethylbenzene	1.8	0.50	"	"	"	"	"	"	
Xylenes (total)	29	1.0	"	"	"	"	04/06/17	"	
Gasoline Range Hydrocarbons	900	50	"	"	"	"	04/06/17	"	

Date Sampled: 04/06/17 11:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		173 %	23-173		"	"	04/06/17	"	
Surrogate: Toluene-d8		86.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		452 %	21-167		"	"	"	"	S-02

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/06/17 22:15

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1704069 - EPA 3550A

Blank (1704069-BLK1)

Prepared & Analyzed: 04/06/17

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	12.6		"	12.5	101	30-150				

LCS (1704069-BS1)

Prepared & Analyzed: 04/06/17

C10-C28 (DRO)	463	50	mg/kg	499	92.8	73-134				
Surrogate: o-Terphenyl	12.1		"	12.5	96.4	30-150				

Matrix Spike (1704069-MS1)

Source: 1704050-01

Prepared & Analyzed: 04/06/17

C10-C28 (DRO)	1780	50	mg/kg	499	618	232	50-148			QM-07
Surrogate: o-Terphenyl	13.4		"	12.5	107	30-150				

Matrix Spike Dup (1704069-MSD1)

Source: 1704050-01

Prepared & Analyzed: 04/06/17

C10-C28 (DRO)	1790	50	mg/kg	499	618	235	50-148	0.679	20	QM-07
Surrogate: o-Terphenyl	13.7		"	12.5	110	30-150				

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/06/17 22:15

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

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

Batch 1704070 - EPA 5030 Soil MS

Blank (1704070-BLK1)

Prepared & Analyzed: 04/06/17

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0377		"	0.0400		94.2	23-173			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	21-167			

LCS (1704070-BS1)

Prepared & Analyzed: 04/06/17

Naphthalene	0.0171	0.010	mg/kg				66-138			
Benzene	0.0879	0.0020	"	0.100		87.9	58-130			
Toluene	0.101	0.0050	"	0.100		101	61-134			
Ethylbenzene	0.115	0.0050	"	0.0992		115	74-139			
m,p-Xylene	0.242	0.010	"	0.200		121	73-137			
o-Xylene	0.106	0.0050	"	0.0980		108	73-141			
Xylenes (total)	0.348	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.54	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		98.9	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	21-167			

Matrix Spike (1704070-MS1)

Source: 1704050-01

Prepared & Analyzed: 04/06/17

Naphthalene	0.361	0.010	mg/kg		0.576		10-158			
Benzene	0.343	0.0020	"	0.100	1.45	NR	30-131			QM-07
Toluene	1.65	0.0050	"	0.100	7.62	NR	30-134			QM-07
Ethylbenzene	0.578	0.0050	"	0.0992	1.79	NR	22-153			QM-07
m,p-Xylene	5.05	0.010	"	0.200	22.8	NR	10-159			QM-07
o-Xylene	2.20	0.0050	"	0.0980	6.65	NR	31-151			QM-07
Xylenes (total)	7.26	0.010	"		29.4		30-160			
Gasoline Range Hydrocarbons	175	0.50	"		897		30-160			
Surrogate: 1,2-Dichloroethane-d4	0.0444		"	0.0400		111	23-173			
Surrogate: Toluene-d8	0.0366		"	0.0400		91.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0909		"	0.0400		227	21-167			S-02

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/06/17 22:15

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

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

Batch 1704070 - EPA 5030 Soil MS

Matrix Spike Dup (1704070-MSD1)			Source: 1704050-01		Prepared & Analyzed: 04/06/17					
Naphthalene	0.227	0.010	mg/kg		0.576		10-158	45.7	42	QM-07
Benzene	0.584	0.0020	"	0.100	1.45	NR	30-131	51.9	34	QM-07
Toluene	1.35	0.0050	"	0.100	7.62	NR	30-134	19.7	30	QM-07
Ethylbenzene	0.361	0.0050	"	0.0992	1.79	NR	22-153	46.3	24	QM-07
m,p-Xylene	3.14	0.010	"	0.200	22.8	NR	10-159	46.8	68	QM-07
o-Xylene	1.22	0.0050	"	0.0980	6.65	NR	31-151	57.2	38	QM-07
Xylenes (total)	4.36	0.010	"		29.4		30-160	49.9	30	QM-07
Gasoline Range Hydrocarbons	96.5	0.50	"		897		30-160	58.1	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0400		99.8	23-173			
Surrogate: Toluene-d8	0.0377		"	0.0400		94.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0658		"	0.0400		164	21-167			

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/06/17 22:15

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 10, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Uhrich 13-29

Enclosed are the results of analyses for samples received by Summit Scientific on 04/10/17 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'Ben Shrewsbury', with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury
Laboratory Manager



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/10/17 22:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS02@20'	1704101-01	Soil	04/10/17 14:43	04/10/17 18:00

Summit Scientific

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

A handwritten signature in black ink, appearing to be 'Mark Longhurst'.



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

Project: Uhrich 13-29

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/10/17 22:38

Sample Receipt Checklist

S2 Work Order: 1704101

Client: PDC Client Project ID: Uhrich 13-29

Shipped Via: P/U (UPS, FedEx, Hand Delivered, Pick-up, etc.) Airbill #: _____

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

Cooler ID					
Temp (°C)	<u>5.6</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

4/10/17 1745
Date/Time



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/10/17 22:38

SS02@20'
1704101-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/10/17 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1400	50	mg/kg	1	1704104	04/10/17	04/10/17	8015M	

Date Sampled: **04/10/17 14:43**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/10/17 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	1.6	1.0	mg/kg	100	1704106	04/10/17	04/10/17	EPA 8260B	
Benzene	1.9	0.20	"	"	"	"	"	"	
Toluene	12	0.50	"	"	"	"	"	"	
Ethylbenzene	8.1	0.50	"	"	"	"	"	"	
Xylenes (total)	55	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2400	50	"	"	"	"	"	"	

Date Sampled: **04/10/17 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	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: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/10/17 22:38

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1704104 - EPA 3550A

Blank (1704104-BLK1)

Prepared & Analyzed: 04/10/17

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	13.7		"	12.5		109	30-150			

LCS (1704104-BS1)

Prepared & Analyzed: 04/10/17

C10-C28 (DRO)	464	50	mg/kg	499		93.0	73-134			
Surrogate: o-Terphenyl	12.5		"	12.5		100	30-150			

Matrix Spike (1704104-MS1)

Source: 1704099-01

Prepared & Analyzed: 04/10/17

C10-C28 (DRO)	458	50	mg/kg	499	21.8	87.3	50-148			
Surrogate: o-Terphenyl	12.5		"	12.5		100	30-150			

Matrix Spike Dup (1704104-MSD1)

Source: 1704099-01

Prepared & Analyzed: 04/10/17

C10-C28 (DRO)	465	50	mg/kg	499	21.8	88.8	50-148	1.59	20	
Surrogate: o-Terphenyl	12.4		"	12.5		99.0	30-150			

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/10/17 22:38

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

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

Batch 1704106 - EPA 5030 Soil MS

Blank (1704106-BLK1)

Prepared & Analyzed: 04/10/17

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0400		98.2	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	21-167			

LCS (1704106-BS1)

Prepared & Analyzed: 04/10/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.106	0.0020	"	0.100		106	58-130			
Toluene	0.115	0.0050	"	0.100		115	61-134			
Ethylbenzene	0.120	0.0050	"	0.0992		121	74-139			
m,p-Xylene	0.123	0.010	"	0.200		61.7	73-137			
o-Xylene	0.113	0.0050	"	0.0980		115	73-141			
Xylenes (total)	0.236	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.71	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.6	21-167			

Matrix Spike (1704106-MS1)

Source: 1704101-01

Prepared & Analyzed: 04/10/17

Naphthalene	1.01	0.010	mg/kg		1.61		10-158			
Benzene	0.911	0.0020	"	0.100	1.95	NR	30-131			QM-07
Toluene	3.17	0.0050	"	0.100	11.6	NR	30-134			QM-07
Ethylbenzene	5.41	0.0050	"	0.0992	8.15	NR	22-153			QM-07
m,p-Xylene	17.9	0.010	"	0.200	35.0	NR	10-159			QM-07
o-Xylene	12.5	0.0050	"	0.0980	19.7	NR	31-151			QM-07
Xylenes (total)	30.4	0.010	"		54.6		30-160			
Gasoline Range Hydrocarbons	809	0.50	"		2390		30-160			
Surrogate: 1,2-Dichloroethane-d4	0.233		"	0.0400		583	23-173			S-02
Surrogate: Toluene-d8	0.665		"	0.0400		NR	20-170			S-02
Surrogate: 4-Bromofluorobenzene	0.295		"	0.0400		738	21-167			S-02

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/10/17 22:38

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

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

Batch 1704106 - EPA 5030 Soil MS

Matrix Spike Dup (1704106-MSD1)		Source: 1704101-01			Prepared & Analyzed: 04/10/17					
Naphthalene	2.23	0.010	mg/kg		1.61		10-158	74.9	42	QM-07
Benzene	2.67	0.0020	"	0.100	1.95	726	30-131	98.3	34	QM-07
Toluene	12.9	0.0050	"	0.100	11.6	NR	30-134	121	30	QM-07
Ethylbenzene	8.21	0.0050	"	0.0992	8.15	65.5	22-153	41.2	24	QM-07
m,p-Xylene	24.7	0.010	"	0.200	35.0	NR	10-159	32.0	68	QM-07
o-Xylene	18.6	0.0050	"	0.0980	19.7	NR	31-151	39.4	38	QM-07
Xylenes (total)	43.4	0.010	"		54.6		30-160	35.1	30	QM-07
Gasoline Range Hydrocarbons	1040	0.50	"		2390		30-160	24.8	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.337		"	0.0400		844	23-173			S-02
Surrogate: Toluene-d8	1.02		"	0.0400		NR	20-170			S-02
Surrogate: 4-Bromofluorobenzene	0.358		"	0.0400		895	21-167			S-02

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/10/17 22:38

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 16, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Uhrich 13-29

Enclosed are the results of analyses for samples received by Summit Scientific on 04/14/17 17:45. 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', with a stylized, cursive script.

Paul Shrewsbury
President



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/16/17 13:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS03@12'	1704152-01	Soil	04/14/17 08:58	04/14/17 17:45
SS04@22'	1704152-02	Soil	04/14/17 09:00	04/14/17 17:45
SS05@12'	1704152-03	Soil	04/14/17 13:11	04/14/17 17:45
SS06@22'	1704152-04	Soil	04/14/17 13:15	04/14/17 17:45

Summit Scientific

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

Project: Uhrich 13-29

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/16/17 13:03

Sample Receipt Checklist

S2 Work Order: 1704152

Client: PDC

Client Project ID: Uhrich 13-29

Shipped Via: PLU

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID					
Temp (°C)	<u>2.5</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>			
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

4/14/17 1700
Date/Time



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/16/17 13:03

SS03@12'
1704152-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/17 08:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704164	04/14/17	04/14/17	8015M	

Date Sampled: **04/14/17 08:58**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/17 08:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704163	04/14/17	04/15/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/17 08:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.3 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/16/17 13:03

SS04@22'
1704152-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/17 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704164	04/14/17	04/14/17	8015M	

Date Sampled: **04/14/17 09:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/17 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704163	04/14/17	04/15/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/17 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.8 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/16/17 13:03

SS05@12'
1704152-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/17 13:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704164	04/14/17	04/15/17	8015M	

Date Sampled: **04/14/17 13:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/17 13:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704163	04/14/17	04/15/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/17 13:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.7 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/16/17 13:03

SS06@22'
1704152-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/17 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704164	04/14/17	04/15/17	8015M	

Date Sampled: **04/14/17 13:15**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/17 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704163	04/14/17	04/15/17	EPA 8260B	
Benzene	0.010	0.0020	"	"	"	"	"	"	
Toluene	0.0060	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/17 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.5 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/16/17 13:03

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1704164 - EPA 3550A

Blank (1704164-BLK1)

Prepared & Analyzed: 04/14/17

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	14.3		"	12.5	114		30-150			

LCS (1704164-BS1)

Prepared & Analyzed: 04/14/17

C10-C28 (DRO)	511	50	mg/kg	499	102		73-134			
Surrogate: o-Terphenyl	14.1		"	12.5	113		30-150			

Matrix Spike (1704164-MS1)

Source: 1704152-01

Prepared & Analyzed: 04/14/17

C10-C28 (DRO)	543	50	mg/kg	499	24.2	104	50-148			
Surrogate: o-Terphenyl	14.4		"	12.5	115		30-150			

Matrix Spike Dup (1704164-MSD1)

Source: 1704152-01

Prepared & Analyzed: 04/14/17

C10-C28 (DRO)	533	50	mg/kg	499	24.2	102	50-148	1.80	20	
Surrogate: o-Terphenyl	14.1		"	12.5	113		30-150			

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/16/17 13:03

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

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

Batch 1704163 - EPA 5030 Soil MS

Blank (1704163-BLK1)

Prepared: 04/14/17 Analyzed: 04/15/17

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0361</i>		<i>"</i>	<i>0.0400</i>		<i>90.2</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0379</i>		<i>"</i>	<i>0.0400</i>		<i>94.8</i>	<i>21-167</i>			

LCS (1704163-BS1)

Prepared: 04/14/17 Analyzed: 04/15/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0842	0.0020	"	0.100		84.2	58-130			
Toluene	0.100	0.0050	"	0.100		100	61-134			
Ethylbenzene	0.113	0.0050	"	0.0992		114	74-139			
m,p-Xylene	0.243	0.010	"	0.200		122	73-137			
o-Xylene	0.109	0.0050	"	0.0980		111	73-141			
Xylenes (total)	0.352	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.42	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0413</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.4</i>	<i>21-167</i>			

Matrix Spike (1704163-MS1)

Source: 1704152-01

Prepared: 04/14/17 Analyzed: 04/15/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0839	0.0020	"	0.100	ND	83.9	30-131			
Toluene	0.102	0.0050	"	0.100	ND	102	30-134			
Ethylbenzene	0.116	0.0050	"	0.0992	ND	117	22-153			
m,p-Xylene	0.249	0.010	"	0.200	ND	125	10-159			
o-Xylene	0.111	0.0050	"	0.0980	ND	113	31-151			
Xylenes (total)	0.360	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	2.46	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0424</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0381</i>		<i>"</i>	<i>0.0400</i>		<i>95.2</i>	<i>21-167</i>			

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/16/17 13:03

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

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

Batch 1704163 - EPA 5030 Soil MS

Matrix Spike Dup (1704163-MSD1)			Source: 1704152-01		Prepared: 04/14/17		Analyzed: 04/15/17			
Naphthalene	ND	0.010	mg/kg		ND		10-158			42
Benzene	0.0861	0.0020	"	0.100	ND	86.1	30-131	2.54		34
Toluene	0.102	0.0050	"	0.100	ND	102	30-134	0.147		30
Ethylbenzene	0.112	0.0050	"	0.0992	ND	113	22-153	3.45		24
m,p-Xylene	0.243	0.010	"	0.200	ND	122	10-159	2.46		68
o-Xylene	0.108	0.0050	"	0.0980	ND	110	31-151	2.22		38
Xylenes (total)	0.351	0.010	"		ND		30-160	2.39		30
Gasoline Range Hydrocarbons	2.52	0.50	"		ND		30-160	2.47		30
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0369		"	0.0400		92.2	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: Uhrich 13-29

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/16/17 13:03

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 18, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Uhrich 13-29

Enclosed are the results of analyses for samples received by Summit Scientific on 04/17/17 17:39. 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', with a stylized, cursive script.

Paul Shrewsbury
President



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS07@13'	1704163-01	Soil	04/17/17 09:35	04/17/17 17:39
SS08@22'	1704163-02	Soil	04/17/17 09:49	04/17/17 17:39
SS09@12'	1704163-03	Soil	04/17/17 10:33	04/17/17 17:39
SS10@22'	1704163-04	Soil	04/17/17 10:38	04/17/17 17:39
SS11@12'	1704163-05	Soil	04/17/17 10:55	04/17/17 17:39
SS12@22'	1704163-06	Soil	04/17/17 11:00	04/17/17 17:39
SS13@12'	1704163-07	Soil	04/17/17 11:08	04/17/17 17:39
SS14@22'	1704163-08	Soil	04/17/17 11:11	04/17/17 17:39
SS15@12'	1704163-09	Soil	04/17/17 11:20	04/17/17 17:39
SS16@22'	1704163-10	Soil	04/17/17 11:28	04/17/17 17:39
SS17@12'	1704163-11	Soil	04/17/17 11:32	04/17/17 17:39
SS18@22'	1704163-12	Soil	04/17/17 11:36	04/17/17 17:39

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.

Page 2 of 20



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

Project: Uhrich 13-29

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

Sample Receipt Checklist

S2 Work Order: 1704/63-1

Client: PDC

Client Project ID: Uhrich 13-29

Shipped Via:

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #:

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

Cooler ID					
Temp (°C)	<u>5.1</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<u>✓</u>			<u>under</u>
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<u>✓</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>✓</u>			
If custody seals are present, are they intact ⁽¹⁾ ?			<u>✓</u>	
Are short holding time analytes or samples with HTs due within 48 hours present?	<u>✓</u>			
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u>✓</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>✓</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>✓</u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u>✓</u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<u>✓</u>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<u>✓</u>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<u>✓</u>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<u>✓</u>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Longhurst
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

4-17-17 17:38
Date/Time



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS07@13'
1704163-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1600	50	mg/kg	1	1704182	04/17/17	04/17/17	8015M	

Date Sampled: **04/17/17 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		125 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.39	0.010	mg/kg	1	1704181	04/17/17	04/18/17	EPA 8260B	
Benzene	0.73	0.0020	"	"	"	"	"	"	
Toluene	1.6	0.50	"	100	"	"	"	"	
Ethylbenzene	3.8	0.50	"	"	"	"	"	"	
Xylenes (total)	16	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1200	50	"	"	"	"	04/18/17	"	

Date Sampled: **04/17/17 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		96.4 %	23-173		"	"	04/18/17	"	
<i>Surrogate: Toluene-d8</i>		98.8 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		105 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS08@22'
1704163-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 09:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	290	50	mg/kg	1	1704182	04/17/17	04/17/17	8015M	

Date Sampled: **04/17/17 09:49**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 09:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.28	0.010	mg/kg	1	1704181	04/17/17	04/18/17	EPA 8260B	
Benzene	0.39	0.0020	"	"	"	"	"	"	
Toluene	11	0.50	"	100	"	"	"	"	
Ethylbenzene	3.3	0.50	"	"	"	"	"	"	
Xylenes (total)	25	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1000	50	"	"	"	"	04/18/17	"	

Date Sampled: **04/17/17 09:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.8 %	23-173		"	"	04/18/17	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS09@12'
1704163-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704182	04/17/17	04/17/17	8015M	

Date Sampled: **04/17/17 10:33**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704181	04/17/17	04/17/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/17/17 10:33**

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

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS10@22'
1704163-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 10:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704182	04/17/17	04/17/17	8015M	

Date Sampled: **04/17/17 10:38**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 10:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704181	04/17/17	04/17/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/17/17 10:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS11@12'
1704163-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704182	04/17/17	04/17/17	8015M	

Date Sampled: **04/17/17 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704181	04/17/17	04/17/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.50	0.50	"	"	"	"	"	"	

Date Sampled: **04/17/17 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	21-167		"	"	"	"	

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS12@22'
1704163-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704182	04/17/17	04/17/17	8015M	

Date Sampled: **04/17/17 11:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704181	04/17/17	04/17/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/17/17 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS13@12'
1704163-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 11:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704182	04/17/17	04/18/17	8015M	

Date Sampled: **04/17/17 11:08**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 11:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704181	04/17/17	04/17/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/17/17 11:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	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: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS14@22'
1704163-08 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 11:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704182	04/17/17	04/18/17	8015M	

Date Sampled: **04/17/17 11:11**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 11:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704181	04/17/17	04/17/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/17/17 11:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		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: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS15@12'
1704163-09 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704182	04/17/17	04/18/17	8015M	

Date Sampled: **04/17/17 11:20**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704181	04/17/17	04/17/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/17/17 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		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: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS16@22'
1704163-10 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704182	04/17/17	04/18/17	8015M	

Date Sampled: **04/17/17 11:28**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704181	04/17/17	04/17/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/17/17 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		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: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS17@12'
1704163-11 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704182	04/17/17	04/18/17	8015M	

Date Sampled: **04/17/17 11:32**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704181	04/17/17	04/17/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/17/17 11:32**

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

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

SS18@22'
1704163-12 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/17 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704182	04/17/17	04/18/17	8015M	

Date Sampled: **04/17/17 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704181	04/17/17	04/18/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/17/17 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1704182 - EPA 3550A

Blank (1704182-BLK1)

Prepared & Analyzed: 04/17/17

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	14.4		"	12.5		116	30-150			

LCS (1704182-BS1)

Prepared & Analyzed: 04/17/17

C10-C28 (DRO)	611	50	mg/kg	499		123	73-134			
Surrogate: o-Terphenyl	14.2		"	12.5		114	30-150			

Matrix Spike (1704182-MS1)

Source: 1704163-03

Prepared & Analyzed: 04/17/17

C10-C28 (DRO)	538	50	mg/kg	499	35.9	101	50-148			
Surrogate: o-Terphenyl	13.9		"	12.5		111	30-150			

Matrix Spike Dup (1704182-MSD1)

Source: 1704163-03

Prepared & Analyzed: 04/17/17

C10-C28 (DRO)	541	50	mg/kg	499	35.9	101	50-148	0.582	20	
Surrogate: o-Terphenyl	14.0		"	12.5		112	30-150			

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

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

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

Batch 1704181 - EPA 5030 Soil MS

Blank (1704181-BLK1)

Prepared & Analyzed: 04/17/17

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.7</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.4</i>	<i>21-167</i>			

LCS (1704181-BS1)

Prepared & Analyzed: 04/17/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0971	0.0020	"	0.100		97.1	58-130			
Toluene	0.106	0.0050	"	0.100		106	61-134			
Ethylbenzene	0.107	0.0050	"	0.0992		108	74-139			
m,p-Xylene	0.224	0.010	"	0.200		112	73-137			
o-Xylene	0.101	0.0050	"	0.0980		103	73-141			
Xylenes (total)	0.213	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.41	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0377</i>		<i>"</i>	<i>0.0400</i>		<i>94.4</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0424</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.6</i>	<i>21-167</i>			

Matrix Spike (1704181-MS1)

Source: 1704163-03

Prepared & Analyzed: 04/17/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.107	0.0020	"	0.100	ND	107	30-131			
Toluene	0.117	0.0050	"	0.100	ND	117	30-134			
Ethylbenzene	0.118	0.0050	"	0.0992	ND	119	22-153			
m,p-Xylene	0.248	0.010	"	0.200	ND	124	10-159			
o-Xylene	0.112	0.0050	"	0.0980	ND	114	31-151			
Xylenes (total)	0.235	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	2.64	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.3</i>	<i>21-167</i>			

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

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

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

Batch 1704181 - EPA 5030 Soil MS

Matrix Spike Dup (1704181-MSD1)		Source: 1704163-03			Prepared & Analyzed: 04/17/17					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.110	0.0020	"	0.100	ND	110	30-131	3.05	34	
Toluene	0.121	0.0050	"	0.100	ND	121	30-134	3.03	30	
Ethylbenzene	0.125	0.0050	"	0.0992	ND	126	22-153	5.67	24	
m,p-Xylene	0.230	0.010	"	0.200	ND	115	10-159	7.49	68	
o-Xylene	0.118	0.0050	"	0.0980	ND	120	31-151	5.67	38	
Xylenes (total)	0.249	0.010	"		ND		30-160	5.81	30	
Gasoline Range Hydrocarbons	2.80	0.50	"		ND		30-160	5.86	30	
Surrogate: 1,2-Dichloroethane-d4	0.0401		"	0.0400		100	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		98.9	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: Uhrich 13-29

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/18/17 06:27

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 19, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Uhrich 13-29

Enclosed are the results of analyses for samples received by Summit Scientific on 04/18/17 17:45. 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', with a stylized, cursive script.

Paul Shrewsbury
President



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/19/17 06:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS19@12'	1704168-01	Soil	04/18/17 10:02	04/18/17 17:45
SS20@22'	1704168-02	Soil	04/18/17 10:05	04/18/17 17:45

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/19/17 06:31

Sample Receipt Checklist

S2 Work Order: 1704168

Client: PDC

Client Project ID: Uhrich 13-29

Shipped Via: 8/V

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID					
Temp (°C)	<u>4.3</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? if yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

4/18/17 1720
Date/Time



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/19/17 06:31

SS19@12'
1704168-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/18/17 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704189	04/18/17	04/19/17	8015M	

Date Sampled: **04/18/17 10:02**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/18/17 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704190	04/18/17	04/18/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/18/17 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.9 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/19/17 06:31

SS20@22'
1704168-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/18/17 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1704189	04/18/17	04/19/17	8015M	

Date Sampled: **04/18/17 10:05**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/18/17 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1704190	04/18/17	04/18/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/18/17 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		82.7 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/19/17 06:31

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1704189 - EPA 3550A

Blank (1704189-BLK1)

Prepared & Analyzed: 04/18/17

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	14.6		"	12.5		116	30-150			

LCS (1704189-BS1)

Prepared & Analyzed: 04/18/17

C10-C28 (DRO)	565	50	mg/kg	499		113	73-134			
Surrogate: o-Terphenyl	15.4		"	12.5		123	30-150			

Matrix Spike (1704189-MS1)

Source: 1704168-01

Prepared & Analyzed: 04/18/17

C10-C28 (DRO)	532	50	mg/kg	499	22.3	102	50-148			
Surrogate: o-Terphenyl	14.1		"	12.5		113	30-150			

Matrix Spike Dup (1704189-MSD1)

Source: 1704168-01

Prepared & Analyzed: 04/18/17

C10-C28 (DRO)	530	50	mg/kg	499	22.3	102	50-148	0.509	20	
Surrogate: o-Terphenyl	14.2		"	12.5		114	30-150			

Summit Scientific

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



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/19/17 06:31

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

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

Batch 1704190 - EPA 5030 Soil MS

Blank (1704190-BLK1)

Prepared & Analyzed: 04/18/17

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0338</i>		<i>"</i>	<i>0.0400</i>		<i>84.5</i>	<i>21-167</i>			

LCS (1704190-BS1)

Prepared & Analyzed: 04/18/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0821	0.0020	"	0.100		82.1	58-130			
Toluene	0.104	0.0050	"	0.100		104	61-134			
Ethylbenzene	0.119	0.0050	"	0.0992		120	74-139			
m,p-Xylene	0.257	0.010	"	0.200		129	73-137			
o-Xylene	0.111	0.0050	"	0.0980		114	73-141			
Xylenes (total)	0.369	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.71	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0368</i>		<i>"</i>	<i>0.0400</i>		<i>92.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.4</i>	<i>21-167</i>			

Matrix Spike (1704190-MS1)

Source: 1704168-01

Prepared & Analyzed: 04/18/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0863	0.0020	"	0.100	ND	86.3	30-131			
Toluene	0.101	0.0050	"	0.100	ND	101	30-134			
Ethylbenzene	0.112	0.0050	"	0.0992	ND	113	22-153			
m,p-Xylene	0.246	0.010	"	0.200	ND	123	10-159			
o-Xylene	0.109	0.0050	"	0.0980	ND	111	31-151			
Xylenes (total)	0.355	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	2.72	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0428</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0372</i>		<i>"</i>	<i>0.0400</i>		<i>92.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0365</i>		<i>"</i>	<i>0.0400</i>		<i>91.2</i>	<i>21-167</i>			

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/19/17 06:31

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

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

Batch 1704190 - EPA 5030 Soil MS

Matrix Spike Dup (1704190-MSD1)			Source: 1704168-01		Prepared & Analyzed: 04/18/17					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0840	0.0020	"	0.100	ND	84.0	30-131	2.68	34	
Toluene	0.0994	0.0050	"	0.100	ND	99.4	30-134	1.62	30	
Ethylbenzene	0.115	0.0050	"	0.0992	ND	116	22-153	2.50	24	
m,p-Xylene	0.248	0.010	"	0.200	ND	124	10-159	0.997	68	
o-Xylene	0.111	0.0050	"	0.0980	ND	113	31-151	1.61	38	
Xylenes (total)	0.359	0.010	"		ND		30-160	1.19	30	
Gasoline Range Hydrocarbons	2.76	0.50	"		ND		30-160	1.66	30	
Surrogate: 1,2-Dichloroethane-d4	0.0434		"	0.0400		109	23-173			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400		92.0	21-167			

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

Project: Uhrich 13-29

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/19/17 06:31

Notes and Definitions

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

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 02, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Uhrich 13-29

Enclosed are the results of analyses for samples received by Summit Scientific on 05/01/17 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 06:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	1705005-01	Water	05/01/17 12:15	05/01/17 17:00

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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Page 2 of 7



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 06:49

Sample Receipt Checklist

S2 Work Order: 1705005

Client: PDC

Client Project ID: Uhrich 13-29

Shipped Via: P/U

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID					
Temp (°C)	<u>1.8</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

5/1/17 1700
Date/Time



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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 06:49

GW01
1705005-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/01/17 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	3.2	1.0	ug/l	1	1705008	05/01/17	05/01/17	EPA 8260B	
Toluene	1.8	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	4.3	2.0	"	"	"	"	"	"	

Date Sampled: **05/01/17 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		92.0 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 06:49

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1705008 - EPA 5030 Water MS

Blank (1705008-BLK1)

Prepared & Analyzed: 05/01/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.5		"	13.3		93.5	37-154			
Surrogate: Toluene-d8	12.3		"	13.3		92.0	45-149			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	45-146			

LCS (1705008-BS1)

Prepared & Analyzed: 05/01/17

Benzene	32.0	1.0	ug/l	33.3		95.9	51-132			
Toluene	32.4	1.0	"	33.3		97.3	51-138			
Ethylbenzene	32.9	1.0	"	33.1		99.4	58-146			
m,p-Xylene	60.5	2.0	"	66.5		90.9	57-144			
o-Xylene	30.8	1.0	"	32.7		94.2	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.3		95.9	37-154			
Surrogate: Toluene-d8	13.7		"	13.3		103	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.3	45-146			

Matrix Spike (1705008-MS1)

Source: 1704252-01

Prepared & Analyzed: 05/01/17

Benzene	34.9	1.0	ug/l	33.3	ND	105	34-141			
Toluene	35.9	1.0	"	33.3	ND	108	27-151			
Ethylbenzene	37.8	1.0	"	33.1	ND	114	29-160			
m,p-Xylene	69.6	2.0	"	66.5	ND	105	20-166			
o-Xylene	35.6	1.0	"	32.7	ND	109	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.5		"	13.3		101	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.2	45-149			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.9	45-146			

Summit Scientific

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

Project: Uhrich 13-29
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 06:49

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

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

Batch 1705008 - EPA 5030 Water MS

Matrix Spike Dup (1705008-MSD1)	Source: 1704252-01			Prepared & Analyzed: 05/01/17						
Benzene	36.1	1.0	ug/l	33.3	ND	108	34-141	3.30	32	
Toluene	37.2	1.0	"	33.3	ND	112	27-151	3.59	25	
Ethylbenzene	40.2	1.0	"	33.1	ND	122	29-160	6.10	50	
m,p-Xylene	74.4	2.0	"	66.5	ND	112	20-166	6.72	36	
o-Xylene	38.4	1.0	"	32.7	ND	117	33-159	7.57	26	
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.3		103	37-154			
Surrogate: Toluene-d8	12.5		"	13.3		93.8	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.7	45-146			

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

Project: Uhrich 13-29

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 06:49

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