

TABLE 1
MCCARTY 28-6 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 @ 10'	2/28/2017	10	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS02 @ 10'	2/28/2017	10	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS03 @ 10'	2/28/2017	10	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS04 @ 10'	2/28/2017	10	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS05 @ 10'	2/28/2017	10	<0.0020	<0.0050	<0.0050	<0.010	<0.010	112
SS06 @ 10'	3/1/2017	10	<0.0020	<0.0050	<0.0050	<0.010	<0.010	145

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
MCCARTY 28-6 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	3/13/2017	<1.0	<1.0	<1.0	<1.0	~12

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

March 01, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: McCarty 28-6

Enclosed are the results of analyses for samples received by Summit Scientific on 02/28/17 17:51. 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: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/17 06:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@10'	1702205-01	Soil	02/28/17 09:30	02/28/17 17:51
SS02@10'	1702205-02	Soil	02/28/17 09:42	02/28/17 17:51
SS03@10'	1702205-03	Soil	02/28/17 09:59	02/28/17 17:51
SS04@10'	1702205-04	Soil	02/28/17 10:21	02/28/17 17:51
SS05@10'	1702205-05	Soil	02/28/17 12:50	02/28/17 17:51

Summit Scientific

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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/17 06:26

Summit Scientific 1702205

S₂

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

Page 1 of 1

Client: PDC Energy Project Manager: Mark Longhurst
Address: _____ E-Mail: _____
City/State/Zip: _____
Phone: _____ Fax: _____ Project Name: McCarty 28-6
Sampler Name: Brick Nelson Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Special Instructions
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	ASTM D 1527	TPH-MS 8015		
1	SS01 (C) 10'	2/28/17	930	1			X			X			X	X		
2	SS02 (C) 10'		942	1			X			X			X	X		
3	SS03 (C) 10'		959	1			X			X			X	X		
4	SS04 (C) 10'		1021	1			X			X			X	X		
5	SS05 (C) 10'		1750	1			X			X			X	X		
6																
7																
8																
9																
10																

Relinquished by:	Date/Time: 2/28/17 15:45	Received by:	Date/Time: 2-28-17 15:45	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time: 2-28-17 19:10	Received by:	Date/Time: 2-28-17 19:10	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"/>	Sample Integrity: 3.6 Temperature Upon Receipt: 3.6 Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No
Relinquished by:	Date/Time:	Received by:	Date/Time:		

www.s2scientific.com



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

Project: McCarty 28-6

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 03/01/17 06:26

Sample Receipt Checklist

S2 Work Order: 1702205

Client: PDC Client Project ID: McCarty 28-6

Shipped Via: H.D. onice Airbill #: _____
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)

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

Cooler ID				
Temp (°C)	<u>3.6</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⁾ ?				
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.	X			
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			X	
Are short holding time analytes or samples with HTs due within 48 hours present?	X			
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			X	
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⁾ ?			X	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			X	

Additional Comments (if any):

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

MMLP
 Custodian Printed Name

KA 2-28-17
 Signature or Initials of Custodian

17:00
 Date/Time



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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/17 06:26

SS01@10'
1702205-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/17 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1702305	02/28/17	02/28/17	8015M	

Date Sampled: **02/28/17 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		90.7 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/17 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1702304	02/28/17	02/28/17	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: **02/28/17 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.5 %	21-167		"	"	"	"	

Summit Scientific

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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/17 06:26

SS02@10'
1702205-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/17 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1702305	02/28/17	02/28/17	8015M	

Date Sampled: **02/28/17 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		94.7 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/17 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1702304	02/28/17	02/28/17	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: **02/28/17 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.6 %	21-167		"	"	"	"	

Summit Scientific

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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/17 06:26

SS03@10'
1702205-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/17 09:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1702305	02/28/17	02/28/17	8015M	

Date Sampled: **02/28/17 09:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		96.7 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/17 09:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1702304	02/28/17	03/01/17	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: **02/28/17 09:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.6 %	21-167		"	"	"	"	

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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/17 06:26

SS04@10'
1702205-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/17 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1702305	02/28/17	02/28/17	8015M	

Date Sampled: **02/28/17 10:21**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/17 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1702304	02/28/17	03/01/17	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: **02/28/17 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.3 %	21-167		"	"	"	"	

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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/17 06:26

SS05@10'
1702205-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/17 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	71	50	mg/kg	1	1702305	02/28/17	02/28/17	8015M	

Date Sampled: **02/28/17 12:50**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/17 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1702304	"	03/01/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	41	0.50	"	"	"	"	"	"	

Date Sampled: **02/28/17 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.2 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		140 %	21-167		"	"	"	"	

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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/17 06:26

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1702305 - EPA 3550A

Blank (1702305-BLK1)

Prepared & Analyzed: 02/28/17

C10-C28 (DRO)	ND	50	mg/kg							
<i>Surrogate: o-Terphenyl</i>	11.2		"	12.5		89.4	30-150			

LCS (1702305-BS1)

Prepared & Analyzed: 02/28/17

C10-C28 (DRO)	497	50	mg/kg	499		99.7	73-134			
<i>Surrogate: o-Terphenyl</i>	12.5		"	12.5		99.6	30-150			

Matrix Spike (1702305-MS1)

Source: 1702203-01

Prepared & Analyzed: 02/28/17

C10-C28 (DRO)	863	50	mg/kg	499	372	98.4	50-148			
<i>Surrogate: o-Terphenyl</i>	20.2		"	12.5		161	30-150			S-02

Matrix Spike Dup (1702305-MSD1)

Source: 1702203-01

Prepared & Analyzed: 02/28/17

C10-C28 (DRO)	877	50	mg/kg	499	372	101	50-148	1.64	20	
<i>Surrogate: o-Terphenyl</i>	18.3		"	12.5		147	30-150			

Summit Scientific

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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/17 06:26

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 1702304 - EPA 5030 Soil MS

Blank (1702304-BLK1)

Prepared & Analyzed: 02/28/17

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>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>99.9</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</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 (1702304-BS1)

Prepared & Analyzed: 02/28/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0804	0.0020	"	0.100		80.4	58-130			
Toluene	0.0948	0.0050	"	0.100		94.8	61-134			
Ethylbenzene	0.114	0.0050	"	0.0992		115	74-139			
m,p-Xylene	0.215	0.010	"	0.200		108	73-137			
o-Xylene	0.102	0.0050	"	0.0980		104	73-141			
Xylenes (total)	0.317	0.010	"				0-200			
Gasoline Range Hydrocarbons	1.26	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.8</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.7</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>			

Matrix Spike (1702304-MS1)

Source: 1702203-01

Prepared & Analyzed: 02/28/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0795	0.0020	"	0.100	ND	79.5	30-131			
Toluene	0.0959	0.0050	"	0.100	ND	95.9	30-134			
Ethylbenzene	0.109	0.0050	"	0.0992	ND	110	22-153			
m,p-Xylene	0.203	0.010	"	0.200	ND	102	10-159			
o-Xylene	0.0986	0.0050	"	0.0980	ND	101	31-151			
Xylenes (total)	0.302	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	7.23	0.50	"		24.6		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>96.9</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0636</i>		<i>"</i>	<i>0.0400</i>		<i>159</i>	<i>21-167</i>			

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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/17 06:26

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 1702304 - EPA 5030 Soil MS

Matrix Spike Dup (1702304-MSD1)	Source: 1702203-01			Prepared & Analyzed: 02/28/17						
Naphthalene	ND	0.010	mg/kg	ND	ND	10-158			42	
Benzene	0.0803	0.0020	"	0.100	ND	80.3	30-131	1.05	34	
Toluene	0.0940	0.0050	"	0.100	ND	94.0	30-134	2.02	30	
Ethylbenzene	0.109	0.0050	"	0.0992	ND	110	22-153	0.0274	24	
m,p-Xylene	0.206	0.010	"	0.200	ND	103	10-159	1.43	68	
o-Xylene	0.100	0.0050	"	0.0980	ND	102	31-151	1.48	38	
Xylenes (total)	0.307	0.010	"		ND		30-160	1.45	30	
Gasoline Range Hydrocarbons	7.36	0.50	"		24.6		30-160	1.77	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0586</i>		<i>"</i>	<i>0.0400</i>		<i>147</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: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/01/17 06:26

Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 02, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: McCarty 28-6

Enclosed are the results of analyses for samples received by Summit Scientific on 03/01/17 17:48. 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: McCarty 28-6
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/17 06:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS06@10'	1703005-01	Soil	03/01/17 11:20	03/01/17 17:48

Summit Scientific

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

S₂

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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/17 06:34

1703005

Summit Scientific

S₂

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

Page 1 of 5

Client: PDC Energy Project Manager: Mark Longhurst
 Address: _____ E-Mail: _____
 City/State/Zip: _____
 Phone: _____ Fax: _____ Project Name: McCarty 28-6
 Sampler Name: Bruce Hulse Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Special Instructions
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)				
1	SS06 @ 10'	3/1/17	1120	1			X						X	X		
2																
3																
4																
5																
6																
7																
8																
9																
10																

Relinquished by: <u>[Signature]</u>	Date/Time: <u>3/1/17 14:00</u>	Received by: <u>[Signature]</u>	Date/Time: <u>3-1-17 14:00</u>	Turn Around Time (Check)	Notes:
Relinquished by: <u>[Signature]</u>	Date/Time: <u>3-1-17 18:00</u>	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>	
				24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
				48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>5.3</u>	
				Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Summit Scientific

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



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

Project: McCarty 28-6

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 03/02/17 06:34

1703005

Sample Receipt Checklist

S2 Work Order: _____

Client: PDC Client Project ID: McCarty 28-6

Shipped Via: HD opice Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

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

Cooler ID				
Temp (°C)	5.3			

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)?} NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.	X			
Were all samples received intact ^{(1)?}	X			
Was adequate sample volume provided ^{(1)?}	X			
If custody seals are present, are they intact ^{(1)?}			X	
Are short holding time analytes or samples with HTs due within 48 hours present?	X			
Is a chain-of-custody (COC) form present and filled out completely ^{(1)?}	X			
Does the COC agree with the number and type of sample bottles received ^{(1)?}	X			
Do the sample IDs on the bottle labels match the COC ^{(1)?}	X			
Is the COC properly relinquished by the client w/ date and time recorded ^{(1)?}	X			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation (excluding cooling) ^{(1)?} 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 ^{(1)?} Record the pH in Comments.			X	
If dissolved metals are requested, were samples field filtered?			X	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Muri P.
 Custodian Printed Name

MP 3-1-17
 Signature or Initials of Custodian

15:00
 Date/Time



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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/17 06:34

SS06@10'
1703005-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 03/01/17 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	88	50	mg/kg	1	1703016	03/01/17	03/01/17	8015M	

Date Sampled: 03/01/17 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 03/01/17 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1703015	03/01/17	03/01/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	57	0.50	"	"	"	"	"	"	

Date Sampled: 03/01/17 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		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: McCarty 28-6

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 03/02/17 06:34

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1703016 - EPA 3550A

Blank (1703016-BLK1)				Prepared & Analyzed: 03/01/17						
C10-C28 (DRO)	ND	50	mg/kg							
<i>Surrogate: o-Terphenyl</i>	13.2		"	12.5		106	30-150			
LCS (1703016-BS1)				Prepared & Analyzed: 03/01/17						
C10-C28 (DRO)	600	50	mg/kg	499		120	73-134			
<i>Surrogate: o-Terphenyl</i>	13.6		"	12.5		109	30-150			
Matrix Spike (1703016-MS1)				Source: 1703003-01		Prepared & Analyzed: 03/01/17				
C10-C28 (DRO)	560	50	mg/kg	499	9.18	110	50-148			
<i>Surrogate: o-Terphenyl</i>	12.6		"	12.5		101	30-150			
Matrix Spike Dup (1703016-MSD1)				Source: 1703003-01		Prepared & Analyzed: 03/01/17				
C10-C28 (DRO)	560	50	mg/kg	499	9.18	110	50-148	0.0586	20	
<i>Surrogate: o-Terphenyl</i>	12.3		"	12.5		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: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/17 06:34

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 1703015 - EPA 5030 Soil MS

Blank (1703015-BLK1)

Prepared & Analyzed: 03/01/17

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>0.0372</i>		<i>"</i>	<i>0.0400</i>		<i>92.9</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>0.0362</i>		<i>"</i>	<i>0.0400</i>		<i>90.5</i>	<i>21-167</i>			

LCS (1703015-BS1)

Prepared & Analyzed: 03/01/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0796	0.0020	"	0.100		79.6	58-130			
Toluene	0.0952	0.0050	"	0.100		95.2	61-134			
Ethylbenzene	0.114	0.0050	"	0.0992		114	74-139			
m,p-Xylene	0.220	0.010	"	0.200		110	73-137			
o-Xylene	0.104	0.0050	"	0.0980		106	73-141			
Xylenes (total)	0.324	0.010	"				0-200			
Gasoline Range Hydrocarbons	1.27	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.4</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.0</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0377</i>		<i>"</i>	<i>0.0400</i>		<i>94.2</i>	<i>21-167</i>			

Matrix Spike (1703015-MS1)

Source: 1703003-01

Prepared & Analyzed: 03/01/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0824	0.0020	"	0.100	ND	82.4	30-131			
Toluene	0.0962	0.0050	"	0.100	ND	96.2	30-134			
Ethylbenzene	0.114	0.0050	"	0.0992	ND	115	22-153			
m,p-Xylene	0.219	0.010	"	0.200	ND	110	10-159			
o-Xylene	0.106	0.0050	"	0.0980	ND	108	31-151			
Xylenes (total)	0.325	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	1.22	0.50	"		ND		30-160			
<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>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>96.9</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: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/17 06:34

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 1703015 - EPA 5030 Soil MS

Matrix Spike Dup (1703015-MSD1)	Source: 1703003-01			Prepared & Analyzed: 03/01/17						
Naphthalene	ND	0.010	mg/kg	ND	ND	10-158			42	
Benzene	0.0804	0.0020	"	0.100	ND	80.4	30-131	2.47	34	
Toluene	0.0962	0.0050	"	0.100	ND	96.2	30-134	0.00	30	
Ethylbenzene	0.115	0.0050	"	0.0992	ND	116	22-153	0.445	24	
m,p-Xylene	0.221	0.010	"	0.200	ND	111	10-159	0.791	68	
o-Xylene	0.106	0.0050	"	0.0980	ND	108	31-151	0.142	38	
Xylenes (total)	0.327	0.010	"		ND		30-160	0.581	30	
Gasoline Range Hydrocarbons	1.25	0.50	"		ND		30-160	2.53	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.3</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: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/02/17 06:34

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 14, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: McCarty 28-6

Enclosed are the results of analyses for samples received by Summit Scientific on 03/13/17 16:35. 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: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/17 06:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	1703089-01	Water	03/13/17 09:56	03/13/17 16:35

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: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/17 06:52

Summit Scientific 1703089

741 Corporate Circle Suite 1 • Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: PDC	Project Manager: Mark Longhurst
Address:	E-Mail: Mark.Longhurst@pdce.com
City/State/Zip:	Project Name: McCarty 28-6
Phone: Fax:	Project Number:
Sampler Name: Tyler Blessing	

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative			Matrix			Analyze For:				Special Instructions			
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX (8260)					
GW01	3/13/2017	9:56	3	X				X									
Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)				Notes:									
<i>[Signature]</i>	3/13/17 15:55	<i>[Signature]</i>	3/17/17 16:35	Same Day	<input checked="" type="checkbox"/>	72 Hours	<input type="checkbox"/>	fN ICE									
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 Hours	<input type="checkbox"/>	Standard	<input type="checkbox"/>										
<i>[Signature]</i>	3/13/17 16:45	<i>[Signature]</i>	3-13-17 16:45	48 Hours	<input type="checkbox"/>		<input type="checkbox"/>										
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity:													
				Temperature Upon Receipt:	2.1												
				Intact:	Yes	No											
				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											

www.s2scientific.com

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: McCarty 28-6

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 03/14/17 06:52

Sample Receipt Checklist

S2 Work Order: 1703089
 Client: PDC Client Project ID: McCarty 28-6
 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>2.1</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⁾ ?	<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"/>			<u>HCL</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⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
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.

[Signature]
 Custodian Printed Name

[Signature]
 Signature or Initials of Custodian

3/14/17
 Date/Time

[Signature]



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

Project: McCarty 28-6

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 03/14/17 06:52

GW01
1703089-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/13/17 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703112	03/13/17	03/13/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/13/17 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.9 %	45-146		"	"	"	"	

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: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/17 06:52

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 1703112 - EPA 5030 Water MS

Blank (1703112-BLK1)

Prepared & Analyzed: 03/13/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	15.2		"	13.3		114	37-154			
Surrogate: Toluene-d8	13.6		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.9	45-146			

LCS (1703112-BS1)

Prepared & Analyzed: 03/13/17

Benzene	24.1	1.0	ug/l	33.3		72.2	51-132			
Toluene	29.4	1.0	"	33.3		88.2	51-138			
Ethylbenzene	35.6	1.0	"	33.1		108	58-146			
m,p-Xylene	70.8	2.0	"	66.5		106	57-144			
o-Xylene	33.6	1.0	"	32.7		103	53-146			
Surrogate: 1,2-Dichloroethane-d4	15.0		"	13.3		113	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		96.8	45-149			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		93.1	45-146			

Matrix Spike (1703112-MS1)

Source: 1703069-01

Prepared & Analyzed: 03/13/17

Benzene	24.9	1.0	ug/l	33.3	ND	74.8	34-141			
Toluene	30.2	1.0	"	33.3	ND	90.7	27-151			
Ethylbenzene	35.4	1.0	"	33.1	ND	107	29-160			
m,p-Xylene	70.1	2.0	"	66.5	ND	105	20-166			
o-Xylene	32.6	1.0	"	32.7	ND	99.8	33-159			
Surrogate: 1,2-Dichloroethane-d4	15.9		"	13.3		119	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.4	45-149			
Surrogate: 4-Bromofluorobenzene	12.2		"	13.3		91.3	45-146			

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: McCarty 28-6

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 03/14/17 06:52

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

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

Batch 1703112 - EPA 5030 Water MS

Matrix Spike Dup (1703112-MSD1)	Source: 1703069-01			Prepared & Analyzed: 03/13/17						
Benzene	25.2	1.0	ug/l	33.3	ND	75.8	34-141	1.24	32	
Toluene	31.1	1.0	"	33.3	ND	93.3	27-151	2.87	25	
Ethylbenzene	36.9	1.0	"	33.1	ND	112	29-160	4.15	50	
m,p-Xylene	73.8	2.0	"	66.5	ND	111	20-166	5.09	36	
o-Xylene	34.2	1.0	"	32.7	ND	105	33-159	4.76	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>17.4</i>		<i>"</i>	<i>13.3</i>		<i>131</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.0</i>		<i>"</i>	<i>13.3</i>		<i>97.4</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.1</i>		<i>"</i>	<i>13.3</i>		<i>98.6</i>	<i>45-146</i>			

Summit Scientific

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

Project: McCarty 28-6

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/17 06:52

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