

TABLE 1
GATEWOOD 4-1, 5 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 @ 24'	4/7/2017	24	<0.0020	<0.0050	0.025	0.59	0.092	760
SS02 @ 21.5'	5/1/2017	21.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	2.3
SS03 @ 22'	5/1/2017	22	0.084	<0.0050	0.0075	0.016	<0.010	0.63
SS04 @ 22'	5/2/2017	22	0.0090	0.0091	<0.0050	0.019	<0.010	<50
SS05 @ 22'	5/2/2017	22	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50

Notes:

- Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 30, 2015.
 - 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
GATEWOOD 4-1, 5 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	5/24/2017	<1.0	<1.0	<1.0	<2.0	~25

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 13, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Gatewood 4-1, 5

Enclosed are the results of analyses for samples received by Summit Scientific on 04/07/17 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/13/17 07:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@24'	1704088-01	Soil	04/07/17 10:57	04/07/17 17:00

Summit Scientific

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



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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/13/17 07:02

Summit Scientific

1704088

741 Corporate Circle Suite I • 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: Gatewood 4-1, 5
Phone: Fax:	Project Number:
Sampler Name: Chris Armbruster	

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)	GBTEXN (8260)	DRO (TPH)	EC	pH			
SS01 @ 24'	4/7/2017	10:57	1		X			X				X	X					
Relinquished by: Chris Armbruster		Date/Time: 4/7/17 1700		Received by: [Signature]		Date/Time: 4/7/17 1700		Turn Around Time (Check)					Notes:					
Relinquished by: [Signature]		Date/Time: 4/7/17 1730		Received by: [Signature]		Date/Time: 4-7-17 1730		Same Day <input type="checkbox"/>					72 Hours <input type="checkbox"/>					
Relinquished by: [Signature]		Date/Time: 4/7/17 1730		Received in Lab by: [Signature]		Date/Time: [Signature]		24 Hours <input type="checkbox"/>					Standard <input checked="" type="checkbox"/>					
Relinquished by: [Signature]		Date/Time: 4/7/17 1730		Received in Lab by: [Signature]		Date/Time: [Signature]		48 Hours <input type="checkbox"/>					Sample Integrity: 0.8°C					
Relinquished by: [Signature]		Date/Time: 4/7/17 1730		Received in Lab by: [Signature]		Date/Time: [Signature]		Temperature Upon Receipt: 0.8°C					Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					

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

Project: Gatewood 4-1, 5

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/13/17 07:02

Sample Receipt Checklist

S2 Work Order: 1704088
 Client: PDC Client Project ID: Gatewood 4, 1-5
 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>0.8</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"/>			
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

4/17/17 1730
 Date/Time

[Signature]



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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/13/17 07:02

SS01@24'
1704088-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/17 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	540	50	mg/kg	1	1704101	04/10/17	04/11/17	8015M	

Date Sampled: **04/07/17 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		111 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/17 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.092	0.010	mg/kg	1	1704091	04/10/17	04/12/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.025	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.59	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	220	50	"	100	"	"	"	"	

Date Sampled: **04/07/17 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.9 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.2 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/13/17 07:02

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 1704101 - EPA 3550A

Blank (1704101-BLK1)				Prepared & Analyzed: 04/10/17						
C10-C28 (DRO)	ND	50	mg/kg							
<i>Surrogate: o-Terphenyl</i>	13.0		"	12.5		104	30-150			
LCS (1704101-BS1)				Prepared & Analyzed: 04/10/17						
C10-C28 (DRO)	473	50	mg/kg	499		94.8	73-134			
<i>Surrogate: o-Terphenyl</i>	12.3		"	12.5		98.7	30-150			
Matrix Spike (1704101-MS1)				Source: 1704069-01		Prepared & Analyzed: 04/10/17				
C10-C28 (DRO)	460	50	mg/kg	499	21.2	87.9	50-148			
<i>Surrogate: o-Terphenyl</i>	12.4		"	12.5		99.2	30-150			
Matrix Spike Dup (1704101-MSD1)				Source: 1704069-01		Prepared & Analyzed: 04/10/17				
C10-C28 (DRO)	475	50	mg/kg	499	21.2	90.9	50-148	3.19	20	
<i>Surrogate: o-Terphenyl</i>	12.6		"	12.5		101	30-150			

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/13/17 07:02

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 1704091 - EPA 5030 Soil MS

Blank (1704091-BLK1)

Prepared: 04/10/17 Analyzed: 04/12/17

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>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.7</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0364</i>		<i>"</i>	<i>0.0400</i>		<i>91.0</i>	<i>21-167</i>			

LCS (1704091-BS1)

Prepared: 04/10/17 Analyzed: 04/12/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0865	0.0020	"	0.100		86.5	58-130			
Toluene	0.105	0.0050	"	0.100		105	61-134			
Ethylbenzene	0.111	0.0050	"	0.0992		112	74-139			
m,p-Xylene	0.236	0.010	"	0.200		118	73-137			
o-Xylene	0.104	0.0050	"	0.0980		106	73-141			
Xylenes (total)	0.340	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.60	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0360</i>		<i>"</i>	<i>0.0400</i>		<i>89.9</i>	<i>21-167</i>			

Matrix Spike (1704091-MS1)

Source: 1704053-01

Prepared: 04/10/17 Analyzed: 04/12/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0860	0.0020	"	0.100	ND	86.0	30-131			
Toluene	0.105	0.0050	"	0.100	ND	105	30-134			
Ethylbenzene	0.115	0.0050	"	0.0992	ND	116	22-153			
m,p-Xylene	0.249	0.010	"	0.200	ND	125	10-159			
o-Xylene	0.110	0.0050	"	0.0980	ND	112	31-151			
Xylenes (total)	0.358	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	2.46	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>97.1</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.0</i>	<i>21-167</i>			

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/13/17 07:02

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 1704091 - EPA 5030 Soil MS

Matrix Spike Dup (1704091-MSD1)	Source: 1704053-01			Prepared: 04/10/17		Analyzed: 04/12/17				
Naphthalene	ND	0.010	mg/kg		ND		10-158			42
Benzene	0.0862	0.0020	"	0.100	ND	86.2	30-131	0.244		34
Toluene	0.103	0.0050	"	0.100	ND	103	30-134	2.51		30
Ethylbenzene	0.115	0.0050	"	0.0992	ND	116	22-153	0.157		24
m,p-Xylene	0.249	0.010	"	0.200	ND	125	10-159	0.0362		68
o-Xylene	0.107	0.0050	"	0.0980	ND	109	31-151	3.02		38
Xylenes (total)	0.355	0.010	"		ND		30-160	0.891		30
Gasoline Range Hydrocarbons	2.50	0.50	"		ND		30-160	1.45		30
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0435</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0375</i>		<i>"</i>	<i>0.0400</i>		<i>93.8</i>	<i>21-167</i>			

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/13/17 07:02

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: Gatewood 4-1, 5

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,



Paul Shrewsbury
President



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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 09:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS02@21.5'	1705008-01	Soil	05/01/17 11:12	05/01/17 17:00
SS03@22'	1705008-02	Soil	05/01/17 14:12	05/01/17 17:00

Summit Scientific

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S₂

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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 09:08

Summit Scientific 1705008

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: Gatewood 4-1,5
Sampler Name: Back Altkon 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)	As	Pb	Cr		Other
1	SS02@21.5'	5/1/17	1112	1			Y			X							
2	SS03@22'	5/1/17	1412	1			N			X							
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <u>[Signature]</u>	Date/Time: <u>5/1/17 14:55</u>	Received by: <u>[Signature]</u>	Date/Time: <u>5-1-17 14:55</u>	Turn Around Time (Check)	Notes:
Relinquished by: <u>[Signature]</u>	Date/Time: <u>5-1-17 17:45</u>	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/> 72 hours —	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours — Standard —	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours —	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>20.7</u>	
				Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

www.s2scientific.com

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/02/17 09:08

Sample Receipt Checklist

S2 Work Order: 1705003
 Client: PDC Client Project ID: Gatewood 4-1, 5
 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>20.1</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"/>	
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.				

Muril LR 5-1-17 15:00
 Custodian Printed Name Signature or Initials of Custodian Date/Time



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

Project: Gatewood 4-1, 5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 09:08

SS02@21.5'
1705008-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/01/17 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705014	05/01/17	05/01/17	8015M	

Date Sampled: **05/01/17 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		121 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/01/17 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705013	05/01/17	05/01/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.3	0.50	"	"	"	"	"	"	

Date Sampled: **05/01/17 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		125 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	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: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 09:08

SS03@22'
1705008-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/01/17 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705014	05/01/17	05/02/17	8015M	

Date Sampled: **05/01/17 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		122 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/01/17 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705013	05/01/17	05/01/17	EPA 8260B	
Benzene	0.084	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0075	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.016	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.63	0.50	"	"	"	"	"	"	

Date Sampled: **05/01/17 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/02/17 09:08

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1705014 - EPA 3550A

Blank (1705014-BLK1)				Prepared & Analyzed: 05/01/17							
C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	15.6		"	12.5		125	30-150				
LCS (1705014-BS1)				Prepared & Analyzed: 05/01/17							
C10-C28 (DRO)	523	50	mg/kg	499		105	73-134				
<i>Surrogate: o-Terphenyl</i>	15.2		"	12.5		122	30-150				
Matrix Spike (1705014-MS1)				Source: 1705006-03		Prepared & Analyzed: 05/01/17					
C10-C28 (DRO)	550	50	mg/kg	499	ND	110	50-148				
<i>Surrogate: o-Terphenyl</i>	15.2		"	12.5		122	30-150				
Matrix Spike Dup (1705014-MSD1)				Source: 1705006-03		Prepared & Analyzed: 05/01/17					
C10-C28 (DRO)	550	50	mg/kg	499	ND	110	50-148	0.125		20	
<i>Surrogate: o-Terphenyl</i>	14.9		"	12.5		119	30-150				

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 09:08

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 1705013 - EPA 5030 Soil MS

Blank (1705013-BLK1)

Prepared & Analyzed: 05/01/17

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>0.0424</i>		<i>"</i>	<i>0.0400</i>		<i>106</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>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.1</i>	<i>21-167</i>			

LCS (1705013-BS1)

Prepared & Analyzed: 05/01/17

Naphthalene	0.00984	0.010	mg/kg				66-138			
Benzene	0.0762	0.0020	"	0.100		76.2	58-130			
Toluene	0.0790	0.0050	"	0.100		79.0	61-134			
Ethylbenzene	0.0876	0.0050	"	0.0992		88.3	74-139			
m,p-Xylene	0.159	0.010	"	0.200		79.6	73-137			
o-Xylene	0.0824	0.0050	"	0.0980		84.1	73-141			
Xylenes (total)	0.241	0.010	"				0-200			
Gasoline Range Hydrocarbons	1.83	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>21-167</i>			

Matrix Spike (1705013-MS1)

Source: 1705006-03

Prepared & Analyzed: 05/01/17

Naphthalene	0.0103	0.010	mg/kg		ND		10-158			
Benzene	0.0788	0.0020	"	0.100	ND	78.8	30-131			
Toluene	0.0827	0.0050	"	0.100	ND	82.7	30-134			
Ethylbenzene	0.0860	0.0050	"	0.0992	ND	86.6	22-153			
m,p-Xylene	0.157	0.010	"	0.200	0.00369	76.8	10-159			
o-Xylene	0.0826	0.0050	"	0.0980	ND	84.3	31-151			
Xylenes (total)	0.240	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	1.86	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0447</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.4</i>	<i>21-167</i>			

Summit Scientific

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

Project: Gatewood 4-1, 5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 09:08

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 1705013 - EPA 5030 Soil MS

Matrix Spike Dup (1705013-MSD1)	Source: 1705006-03			Prepared & Analyzed: 05/01/17						
Naphthalene	0.0101	0.010	mg/kg		ND		10-158	2.06	42	
Benzene	0.0771	0.0020	"	0.100	ND	77.1	30-131	2.19	34	
Toluene	0.0802	0.0050	"	0.100	ND	80.2	30-134	3.10	30	
Ethylbenzene	0.0844	0.0050	"	0.0992	ND	85.1	22-153	1.80	24	
m,p-Xylene	0.155	0.010	"	0.200	0.00369	75.8	10-159	1.31	68	
o-Xylene	0.0818	0.0050	"	0.0980	ND	83.4	31-151	1.06	38	
Xylenes (total)	0.237	0.010	"		ND		30-160	1.22	30	
Gasoline Range Hydrocarbons	1.87	0.50	"		ND		30-160	0.518	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0462</i>		<i>"</i>	<i>0.0400</i>		<i>115</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>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>99.1</i>	<i>21-167</i>			

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/17 09:08

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 03, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Gatewood 4-1, 5

Enclosed are the results of analyses for samples received by Summit Scientific on 05/02/17 17:17. 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: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 06:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS04@22'	1705020-01	Soil	05/02/17 09:59	05/02/17 17:17
SS05@22'	1705020-02	Soil	05/02/17 10:46	05/02/17 17:17

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/03/17 06:37

Summit Scientific 1705020

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

Page 1 of 1

Client: PDC Energy
 Address: _____
 City/State/Zip: _____
 Phone: _____ Fax: _____
 Sampler Name: Brock Nelson

Project Manager: Mark Longhurst
 E-Mail: _____
 Project Name: Gatewood 4-1, 5
 Project Number: _____

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)						
SS04@22	5/2/17	959	1			X						X	GBTEX H ₂ O				
SS05@22	5/2/17	1046	1			X						X	TPH-DW 2015				
Relinquished by:	Date/Time: 5/2/17 1700	Received by:	Date/Time: 5/2/17 1700	Turn Around Time (Check)				Notes:									
				Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/>				on ice									
				24 Hours <input type="checkbox"/> Standard <input type="checkbox"/>													
				48 Hours <input type="checkbox"/>													
Relinquished by:	Date/Time: 5/2/17 1730	Received by:	Date/Time:	Sample Integrity:													
				Temperature Upon Receipt: 8.8°C													
				Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No													

www.s2scientific.com



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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 06:37

Sample Receipt Checklist

S2 Work Order: 1705020

Client: PDC Energy

Client Project ID: Gatewood 4-1,5

Shipped Via: P2U
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID					
Temp (°C)	<u>8.8</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"/>			
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⁾ ? 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

5/2/17 1730
Date/Time

[Signature]



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

Project: Gatewood 4-1, 5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 06:37

SS04@22'
1705020-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/02/17 09:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705026	05/02/17	05/03/17	8015M	

Date Sampled: **05/02/17 09:59**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/02/17 09:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705028	05/02/17	05/02/17	EPA 8260B	
Benzene	0.0090	0.0020	"	"	"	"	"	"	
Toluene	0.0091	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.019	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/02/17 09:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	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: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 06:37

SS05@22'
1705020-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/02/17 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705026	05/02/17	05/03/17	8015M	

Date Sampled: **05/02/17 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		119 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/02/17 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705028	05/02/17	05/02/17	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: **05/02/17 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.2 %	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: Gatewood 4-1, 5

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/03/17 06:37

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1705026 - EPA 3550A

Blank (1705026-BLK1)

Prepared & Analyzed: 05/02/17

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	14.9		"	12.5		120	30-150				

LCS (1705026-BS1)

Prepared & Analyzed: 05/02/17

C10-C28 (DRO)	552	50	mg/kg	499		111	73-134				
<i>Surrogate: o-Terphenyl</i>	15.1		"	12.5		121	30-150				

Matrix Spike (1705026-MS1)

Source: 1705018-01

Prepared & Analyzed: 05/02/17

C10-C28 (DRO)	580	50	mg/kg	499	42.7	108	50-148				
<i>Surrogate: o-Terphenyl</i>	15.1		"	12.5		121	30-150				

Matrix Spike Dup (1705026-MSD1)

Source: 1705018-01

Prepared & Analyzed: 05/02/17

C10-C28 (DRO)	568	50	mg/kg	499	42.7	105	50-148	2.04		20	
<i>Surrogate: o-Terphenyl</i>	14.9		"	12.5		119	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: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 06:37

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

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

Batch 1705028 - EPA 5030 Soil MS

Blank (1705028-BLK1)

Prepared & Analyzed: 05/02/17

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>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.7</i>	<i>21-167</i>			

LCS (1705028-BS1)

Prepared & Analyzed: 05/02/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.105	0.0020	"	0.100		105	58-130			
Toluene	0.116	0.0050	"	0.100		116	61-134			
Ethylbenzene	0.124	0.0050	"	0.0992		125	74-139			
m,p-Xylene	0.226	0.010	"	0.200		113	73-137			
o-Xylene	0.116	0.0050	"	0.0980		119	73-141			
Xylenes (total)	0.342	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.72	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>102</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>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.4</i>	<i>21-167</i>			

Matrix Spike (1705028-MS1)

Source: 1705020-01

Prepared & Analyzed: 05/02/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.117	0.0020	"	0.100	0.00903	108	30-131			
Toluene	0.130	0.0050	"	0.100	0.00909	121	30-134			
Ethylbenzene	0.126	0.0050	"	0.0992	ND	127	22-153			
m,p-Xylene	0.245	0.010	"	0.200	0.0125	117	10-159			
o-Xylene	0.126	0.0050	"	0.0980	0.00666	121	31-151			
Xylenes (total)	0.371	0.010	"		0.0191		30-160			
Gasoline Range Hydrocarbons	2.97	0.50	"		0.256		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0427</i>		<i>"</i>	<i>0.0400</i>		<i>107</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>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.3</i>	<i>21-167</i>			

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/03/17 06:37

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

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

Batch 1705028 - EPA 5030 Soil MS

Matrix Spike Dup (1705028-MSD1)	Source: 1705020-01			Prepared & Analyzed: 05/02/17						
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.118	0.0020	"	0.100	0.00903	109	30-131	1.12	34	
Toluene	0.130	0.0050	"	0.100	0.00909	121	30-134	0.0924	30	
Ethylbenzene	0.128	0.0050	"	0.0992	ND	129	22-153	1.20	24	
m,p-Xylene	0.246	0.010	"	0.200	0.0125	117	10-159	0.208	68	
o-Xylene	0.125	0.0050	"	0.0980	0.00666	121	31-151	0.191	38	
Xylenes (total)	0.371	0.010	"		0.0191		30-160	0.0728	30	
Gasoline Range Hydrocarbons	2.94	0.50	"		0.256		30-160	0.998	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0434</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>97.0</i>	<i>21-167</i>			

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 06:37

Notes and Definitions

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

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 25, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Gatewood 4-1, 5

Enclosed are the results of analyses for samples received by Summit Scientific on 05/24/17 17:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/17 06:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	1705238-01	Water	05/24/17 12:38	05/24/17 17:45

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/25/17 06:42

Sample Receipt Checklist

S2 Work Order: 1705238
 Client: PDC Client Project ID: Gatewood 4-1.5
 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>10.2</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.			<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⁾ ? 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⁾ ? 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.				

Cassandra Strawberry
 Custodian Printed Name Signature or Initials of Custodian

5/24/17 5:40p
 Date/Time



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

Project: Gatewood 4-1, 5
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/25/17 06:42

GW01
1705238-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/24/17 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1705253	05/24/17	05/24/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **05/24/17 12:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.2 %	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: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/17 06:42

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 1705253 - EPA 5030 Water MS

Blank (1705253-BLK1)

Prepared & Analyzed: 05/24/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		98.7	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.2	45-146			

LCS (1705253-BS1)

Prepared & Analyzed: 05/24/17

Benzene	29.1	1.0	ug/l	33.3		87.2	51-132			
Toluene	33.3	1.0	"	33.3		100	51-138			
Ethylbenzene	38.5	1.0	"	33.1		116	58-146			
m,p-Xylene	74.0	2.0	"	66.5		111	57-144			
o-Xylene	35.9	1.0	"	32.7		110	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.3		105	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.5	45-149			
Surrogate: 4-Bromofluorobenzene	15.0		"	13.3		113	45-146			

Matrix Spike (1705253-MS1)

Source: 1705233-24

Prepared & Analyzed: 05/24/17

Benzene	30.1	1.0	ug/l	33.3	ND	90.2	34-141			
Toluene	32.7	1.0	"	33.3	ND	98.1	27-151			
Ethylbenzene	38.6	1.0	"	33.1	ND	117	29-160			
m,p-Xylene	74.3	2.0	"	66.5	ND	112	20-166			
o-Xylene	35.5	1.0	"	32.7	ND	109	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.3		107	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.8	45-149			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	45-146			

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/25/17 06:42

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 1705253 - EPA 5030 Water MS

Matrix Spike Dup (1705253-MSD1)	Source: 1705233-24			Prepared & Analyzed: 05/24/17						
Benzene	29.8	1.0	ug/l	33.3	ND	89.4	34-141	0.935	32	
Toluene	33.6	1.0	"	33.3	ND	101	27-151	2.66	25	
Ethylbenzene	38.9	1.0	"	33.1	ND	118	29-160	0.878	50	
m,p-Xylene	75.0	2.0	"	66.5	ND	113	20-166	0.831	36	
o-Xylene	36.6	1.0	"	32.7	ND	112	33-159	2.88	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.9</i>		<i>"</i>	<i>13.3</i>		<i>112</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.1</i>		<i>"</i>	<i>13.3</i>		<i>98.3</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.5</i>		<i>"</i>	<i>13.3</i>		<i>101</i>	<i>45-146</i>			

Summit Scientific

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

Project: Gatewood 4-1, 5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/25/17 06:42

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