

**TABLE 1**  
**FORMER SETH 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 <sup>(2)</sup> (feet)
<b>COGCC Table 910-1 Groundwater Standard (µg/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
GW01	10/12/2017	<1.0	<1.0	<1.0	<2.0	~5
BH01	1/23/2018	<1.0	<1.0	<1.0	<2.0	11.09
BH02	1/23/2018	<1.0	<1.0	<1.0	<2.0	10.99
BH03	1/23/2018	<1.0	<1.0	<1.0	<2.0	10.56
BH04	1/23/2018	<1.0	<1.0	<1.0	<2.0	10.87
BH05	1/23/2018	<1.0	<1.0	<1.0	<2.0	11.03

**Notes:**

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective January 30, 2015.
2. Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data and product thickness to reflect depth of water from ground surface.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

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

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

## **ATTACHMENT A**

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 30, 2018

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

Enclosed are the results of analyses for samples received by Summit Scientific on 01/23/18 16:30. 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: Seth 1, 5  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/30/18 07:31

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1801241-01	Water	01/23/18 14:15	01/23/18 16:30
BH02	1801241-02	Water	01/23/18 14:22	01/23/18 16:30
BH03	1801241-03	Water	01/23/18 14:05	01/23/18 16:30
BH04	1801241-04	Water	01/23/18 14:07	01/23/18 16:30
BH05	1801241-05	Water	01/23/18 14:14	01/23/18 16:30

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

Project: Seth 1, 5

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
01/30/18 07:31

Summit Scientific

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

1701241

Page 1 of 1

Client: PDC  
Address:  
City/State/Zip:  
Phone: Fax:  
Sampler Name: Tyler Blessing

Project Manager: Mark Longhurst  
E-Mail: Mark.Longhurst@pdce.com  
Project Name: Seth 1, 5  
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:										Special Instructions					
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX (8260)														
BH01	1/23/2018	14:15	3		X			X				X														
BH02	1/23/2018	14:22	3		X			X				X														
BH03	1/23/2018	14:05	3		X			X				X														
BH04	1/23/2018	14:07	3		X			X				X														
BH05	1/23/2018	14:14	3		X			X				X														
Relinquished by:	Date/Time:	Received by:		Date/Time:	Turn Around Time (Check)												omu									
TCU	1/23/18 16:30	1-23-18		16:30	Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>																					
Relinquished by:	Date/Time:	Received by:		Date/Time:	24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>																					
Relinquished by:	Date/Time:	Received by:		Date/Time:	48 Hours <input type="checkbox"/>																					
Relinquished by:	Date/Time:	Received in Lab by:		Date/Time:	Sample Integrity:																					
					Temperature Upon Receipt: 5.3																					
					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: Seth 1, 5  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
01/30/18 07:31

#### Sample Receipt Checklist

S2 Work Order: 1801241

Client: PDC Client Project ID: Seth 1,5

Shipped Via: P.O. Airbill #: \_\_\_\_\_  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

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

Cooler ID					
Temp (°C)	<u>5.3</u>				

Thermometer ID: 61857155-K

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

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

Mark Longhurst  
Custodian Printed Name

KL 1-25-18  
Signature or Initials of Custodian

17:00  
Date/Time



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

Project: Seth 1, 5  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/30/18 07:31

**BH01**  
**1801241-01 (Water)**

**Summit Scientific**

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

Date Sampled: **01/23/18 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801254	01/28/18	01/28/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/23/18 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	45-146		"	"	"	"	

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

Project: Seth 1, 5  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/30/18 07:31

**BH02**  
**1801241-02 (Water)**

**Summit Scientific**

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

Date Sampled: **01/23/18 14:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801254	01/28/18	01/28/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/23/18 14:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	45-146		"	"	"	"	

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

Project: Seth 1, 5  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/30/18 07:31

**BH03**  
**1801241-03 (Water)**

**Summit Scientific**

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

Date Sampled: **01/23/18 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801254	01/28/18	01/28/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/23/18 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	45-146		"	"	"	"	

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Denver CO, 80203

Project: Seth 1, 5  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/30/18 07:31

**BH04**  
**1801241-04 (Water)**

**Summit Scientific**

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

Date Sampled: **01/23/18 14:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801254	01/28/18	01/28/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/23/18 14:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		95.6 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

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Denver CO, 80203

Project: Seth 1, 5  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
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**BH05**  
**1801241-05 (Water)**

**Summit Scientific**

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

Date Sampled: **01/23/18 14:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801254	01/28/18	01/28/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/23/18 14:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.7 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	45-146		"	"	"	"	

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Project: Seth 1, 5  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/30/18 07:31

**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 1801254 - EPA 5030 Water MS**

**Blank (1801254-BLK1)**

Prepared & Analyzed: 01/26/18

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.6		"	13.3		87.2	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.4	45-149			
Surrogate: 4-Bromofluorobenzene	11.7		"	13.3		87.8	45-146			

**LCS (1801254-BS1)**

Prepared & Analyzed: 01/26/18

Benzene	31.4	1.0	ug/l	33.3		94.2	51-132			
Toluene	33.5	1.0	"	33.3		100	51-138			
Ethylbenzene	36.2	1.0	"	33.1		109	58-146			
m,p-Xylene	71.4	2.0	"	66.5		107	57-144			
o-Xylene	34.9	1.0	"	32.7		107	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.2		"	13.3		91.3	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.6	45-149			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.3	45-146			

**Matrix Spike (1801254-MS1)**

Source: 1801237-01

Prepared & Analyzed: 01/26/18

Benzene	30.7	1.0	ug/l	33.3	ND	92.0	34-141			
Toluene	32.7	1.0	"	33.3	ND	98.2	27-151			
Ethylbenzene	36.0	1.0	"	33.1	ND	109	29-160			
m,p-Xylene	71.4	2.0	"	66.5	ND	107	20-166			
o-Xylene	34.6	1.0	"	32.7	ND	106	33-159			
Surrogate: 1,2-Dichloroethane-d4	11.6		"	13.3		86.9	37-154			
Surrogate: Toluene-d8	12.4		"	13.3		93.3	45-149			
Surrogate: 4-Bromofluorobenzene	11.9		"	13.3		89.4	45-146			

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Project Number: [none]  
Project Manager: Mark Longhurst

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**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 1801254 - EPA 5030 Water MS**

Matrix Spike Dup (1801254-MSD1)	Source: 1801237-01			Prepared & Analyzed: 01/26/18						
Benzene	31.4	1.0	ug/l	33.3	ND	94.3	34-141	2.48	32	
Toluene	33.4	1.0	"	33.3	ND	100	27-151	2.03	25	
Ethylbenzene	35.3	1.0	"	33.1	ND	107	29-160	2.05	50	
m,p-Xylene	69.2	2.0	"	66.5	ND	104	20-166	3.12	36	
o-Xylene	34.2	1.0	"	32.7	ND	105	33-159	1.31	26	
Surrogate: 1,2-Dichloroethane-d4	12.7		"	13.3		95.6	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		95.9	45-149			
Surrogate: 4-Bromofluorobenzene	11.9		"	13.3		89.3	45-146			

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1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Seth 1, 5  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/30/18 07:31

### 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