May 23, 2018

Karen Shanahan Olson
Senior EHS Manager
PDC Energy, Inc.
1775 Sherman Street, Suite 3000
Denver, CO 80203

RE: Residential Water Well Sampling Summary
Former Sitzman 1U Tank Battery
NWSW S27 T5N R65W
Remediation # 11252

Dear Mrs. Olson,

Tasman Geosciences, Inc. (Tasman) has prepared this report on behalf of PDC Energy, Inc. (PDC) to summarize the environmental sampling activities performed at the residential wells located near the former Sitzman 1U tank battery (Site). Environmental sampling was conducted in response to the landowner complaint filed to the Colorado Oil and Gas Conservation Commission (COGCC) on May 11, 2018. A summary of well information and sampling activities is provided below.

Residential Well Information

There are two (2) water wells permitted by the Colorado Division of Water Resources (DWR) within 250 feet of the Site. Well "A" (Permit # 276778) is located approximately 100 feet north-northwest of the Site and Well "B" (Permit # 202929-A) is located approximately 225 feet northwest of the Site. Both wells are permitted for domestic use.

Residential Well Sampling

On May 15 and May 22, 2018, residential water well sampling was conducted to confirm water quality, per the request of the landowner. Split samples were collected by the COGCC Environmental Protection Specialist (EPS) and Tasman on behalf of PDC.

Well "B" was sampled on May 15, 2018. Prior to sampling, approximately 25 gallons of water were purged at a rate of 2.5 gallons per minute. Upon temperature stabilization, a water sample was collected. The COGCC water sample was submitted to ALS Environmental (ALS) in Fort Collins, Colorado for laboratory analysis of the COGCC Rule 609 analyte suite. The PDC sample was submitted to Summit Scientific Laboratories (Summit) in Golden, Colorado for analysis of the COGCC Table 910-1 constituents (benzene, toluene, ethylbenzene, total xylenes [BTEX]) by United States Environmental Protection Agency (USEPA) Method 8260B.

Well "A" was sampled on May 22, 2018. Prior to sampling, approximately 30 gallons of were purged from the well. Upon temperature stabilization, a water sample was collected. The COGCC water sample was

submitted to ALS for laboratory analysis of the COGCC Rule 609 analyte suite. The PDC sample was submitted to Summit for analysis of BTEX by USEPA Method 8260B.

Conclusion

Analytical results indicated that BTEX concentrations were below laboratory detection limits in the water samples collected from both Wells "A" and "B". The laboratory reports are included as Attachment A.

Please contact me at (720) 409-8791 if you require any additional information.

Sincerely,

Tasman Geosciences, Inc.

Christine Hamlin
Program Manager

Enclosures:

Attachment A – Laboratory Analytical Reports

ATTACHMENT A

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 16, 2018

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

RE: Sitzman 1U Landowner

Enclosed are the results of analyses for samples received by Summit Scientific on 05/15/18 16:24. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury For Ben Shrewsbury
Laboratory Manager

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sitzman 1U Landowner Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/16/18 06:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WW-W	1805179-01	Water	05/15/18 09:30	05/15/18 16:24

Summit Scientific

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

Summit Scientific

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

805179

Page 1 of 1

Client: POC Energy, Inc.
Address:
City/State/Zip:
Phone: Fax:
Sampler Name: C. Hamlin

Project Manager: Mark Longhurst
E-Mail:
Project Name: Sitzman IV - Landowner
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative: Other (Specify)	Matrix: Groundwater	Matrix: Soil	Matrix: Air - Canister Serial #	Matrix: Other (Specify)	Analyze For: 8260 BTEX	Analyze For:	Analyze For:	Analyze For:	Analyze For:	Analyze For:	Analyze For:	Analyze For:	Special Instructions
WN-W	5/15/18	930	3	X				X				X								

Relinquished by: Date/Time: 5/15/15 1215
Received by: Date/Time: 5/15/18 1024

Relinquished by: Date/Time:
Received by: Date/Time:

Relinquished by: Date/Time:
Received in Lab by: Date/Time:

Turn Around Time (Check)
Same Day [X] 72 Hours [ ]
24 Hours [ ] Standard [ ]
48 Hours [ ]

Sample Integrity:
Temperature Upon Receipt: 3.8
Intact: Yes [X] No [ ]

Notes:
on ice

Sample Receipt Checklist

S2 Work Order: 1805178

Client: PDC Energy Client Project ID: Sitzman 16 - Landowner

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

Matrix (check all that apply): ____Air ____Soil/Solid ✓Water ____Other: _____
(Describe)

Temp (°C)	3.8

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C [1]? 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 [1]?	✓			
Was adequate sample volume provided [1]?	✓			
If custody seals are present, are they intact [1]?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely [1]?	✓			
Does the COC agree with the number and type of sample bottles received [1]?	✓			
Do the sample IDs on the bottle labels match the COC [1]?	✓			
Is the COC properly relinquished by the client w/ date and time recorded [1]?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**		✓		
Are samples preserved that require preservation **(excluding cooling)**[1]? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	✓			HCl
If samples are acid preserved for metals, is the pH ≤ 2[1]? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

[1] **If NO, then contact the client before proceeding with analysis and note in case narrative.**

LP
Custodian Printed Name or Initials

Signature or Initials of Custodian

5/15/18 1811
Date/Time

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sitzman 1U Landowner Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/16/18 06:31

WW-W
1805179-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/15/18 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1805193	05/15/18	05/15/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **05/15/18 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*91.0 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.2 %*	*70-130*		"	"	"	"	

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sitzman 1U Landowner Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/16/18 06:31

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1805193 - EPA 5030 Water MS										
Blank (1805193-BLK1)				Prepared & Analyzed: 05/15/18						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*13.6*		*"*	*13.2*		*103*	*70-130*			
Surrogate: Toluene-d8	*12.0*		*"*	*13.3*		*89.9*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*13.0*		*"*	*13.3*		*97.1*	*70-130*			
LCS (1805193-BS1)				Prepared & Analyzed: 05/15/18						
Benzene	29.3	1.0	ug/l	33.3		87.8	70-130			
Toluene	31.4	1.0	"	33.3		94.4	70-130			
Ethylbenzene	37.1	1.0	"	33.3		111	70-130			
m,p-Xylene	77.0	2.0	"	66.7		115	70-130			
o-Xylene	37.9	1.0	"	33.3		114	70-130			
Surrogate: 1,2-Dichloroethane-d4	*14.1*		*"*	*13.2*		*107*	*70-130*			
Surrogate: Toluene-d8	*12.2*		*"*	*13.3*		*91.4*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*12.6*		*"*	*13.3*		*94.7*	*70-130*			
Matrix Spike (1805193-MS1)	**Source: 1805179-01**			Prepared & Analyzed: 05/15/18						
Benzene	26.9	1.0	ug/l	33.3	ND	80.8	70-130			
Toluene	30.5	1.0	"	33.3	ND	91.5	70-130			
Ethylbenzene	37.1	1.0	"	33.3	ND	111	70-130			
m,p-Xylene	76.4	2.0	"	66.7	ND	115	70-130			
o-Xylene	37.3	1.0	"	33.3	ND	112	70-130			
Surrogate: 1,2-Dichloroethane-d4	*12.8*		*"*	*13.2*		*97.3*	*70-130*			
Surrogate: Toluene-d8	*12.1*		*"*	*13.3*		*90.5*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*12.5*		*"*	*13.3*		*93.8*	*70-130*			

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sitzman 1U Landowner Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/16/18 06:31

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1805193 - EPA 5030 Water MS										
Matrix Spike Dup (1805193-MSD1)	**Source: 1805179-01**			Prepared: 05/15/18 Analyzed: 05/16/18						
Benzene	27.2	1.0	ug/l	33.3	ND	81.7	70-130	1.14	30	
Toluene	31.1	1.0	"	33.3	ND	93.3	70-130	1.88	30	
Ethylbenzene	37.5	1.0	"	33.3	ND	113	70-130	1.15	30	
m,p-Xylene	77.8	2.0	"	66.7	ND	117	70-130	1.83	30	
o-Xylene	38.1	1.0	"	33.3	ND	114	70-130	2.04	30	
Surrogate: 1,2-Dichloroethane-d4	*12.9*		*"*	*13.2*		*97.6*	*70-130*			
Surrogate: Toluene-d8	*12.1*		*"*	*13.3*		*90.7*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*12.8*		*"*	*13.3*		*95.9*	*70-130*			

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sitzman 1U Landowner Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/16/18 06:31

Notes and Definitions

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

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 23, 2018

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

RE: Sitzman 1U Residential

Enclosed are the results of analyses for samples received by Summit Scientific on 05/22/18 11:48. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury For Ben Shrewsbury
Laboratory Manager

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sitzman 1U Residential Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/23/18 06:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WW-E	1805268-01	Water	05/22/18 09:35	05/22/18 11:48

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.

Summit Scientific

1805268

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: C. Hamlin

Project Manager: Mark Longhurst
E-Mail:
Project Name: Sitzman 1U - Residential
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative: Other (Specify)	Matrix: Groundwater	Matrix: Soil	Matrix: Air - Canister Serial #	Matrix: Other (Specify)	Analyze For: 8260 BTEX	Special Instructions
WH-E	5/22/18	935	3	X				X				X	

Relinquished by: Date/Time: 5/22/18 1148
Received by: Date/Time: 5/22/18 1148

Relinquished by: Date/Time:
Received by: Date/Time:

Relinquished by: Date/Time:
Received in Lab by: Date/Time:

Turn Around Time (Check)
Same Day [X]
24 Hours [ ]
48 Hours [ ]
72 Hours [ ]
Standard [ ]

Sample Integrity:
Temperature Upon Receipt: 3.8
Intact: Yes [X] No [ ]

Notes:

Sample Receipt Checklist

S2 Work Order: 1805262

Client: PDC Energy Client Project ID: Sitzman - Residential

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

Matrix (check all that apply): ____Air ____Soil/Solid ✓ Water ____Other: _____ (Describe)

Temp (°C)	3.8

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C [(1)]? 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 [(1)]?	✓			
Was adequate sample volume provided [(1)]?	✓			
If custody seals are present, are they intact [(1)]?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely [(1)]?	✓			
Does the COC agree with the number and type of sample bottles received [(1)]?	✓			
Do the sample IDs on the bottle labels match the COC [(1)]?	✓			
Is the COC properly relinquished by the client w/ date and time recorded [(1)]?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**		✓		
Are samples preserved that require preservation **(excluding cooling)** [(1)]? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	✓			HCl
If samples are acid preserved for metals, is the pH ≤ 2 [(1)]? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

CP
Custodian Printed Name or Initials

Signature or Initials of Custodian

3/22/18 1715
Date/Time

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sitzman 1U Residential Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/23/18 06:49

WW-E
1805268-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/22/18 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1805266	05/22/18	05/22/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **05/22/18 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*143 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*97.3 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*21-167*		"	"	"	"	

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sitzman 1U Residential Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/23/18 06:49

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1805266 - EPA 5030 Water MS										
Blank (1805266-BLK1)				Prepared: 05/22/18 Analyzed: 05/23/18						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*14.2*		*"*	*13.2*		*108*	*23-173*			
Surrogate: Toluene-d8	*13.2*		*"*	*13.3*		*98.6*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.7*		*"*	*13.3*		*103*	*21-167*			
LCS (1805266-BS1)				Prepared: 05/22/18 Analyzed: 05/23/18						
Benzene	30.8	1.0	ug/l	33.3		92.4	70-130			
Toluene	32.5	1.0	"	33.3		97.5	70-130			
Ethylbenzene	38.9	1.0	"	33.3		117	70-130			
m,p-Xylene	72.6	2.0	"	66.7		109	70-130			
o-Xylene	34.2	1.0	"	33.3		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	*14.6*		*"*	*13.2*		*111*	*23-173*			
Surrogate: Toluene-d8	*13.2*		*"*	*13.3*		*99.3*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.2*		*"*	*13.3*		*99.4*	*21-167*			
Matrix Spike (1805266-MS1)		**Source: 1805268-01**		Prepared: 05/22/18 Analyzed: 05/23/18						
Benzene	31.2	1.0	ug/l	33.3	ND	93.5	70-130			
Toluene	32.9	1.0	"	33.3	ND	98.7	70-130			
Ethylbenzene	41.1	1.0	"	33.3	ND	123	70-130			
m,p-Xylene	77.0	2.0	"	66.7	ND	115	70-130			
o-Xylene	34.6	1.0	"	33.3	ND	104	70-130			
Surrogate: 1,2-Dichloroethane-d4	*14.6*		*"*	*13.2*		*110*	*23-173*			
Surrogate: Toluene-d8	*13.3*		*"*	*13.3*		*99.5*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.3*		*"*	*13.3*		*99.8*	*21-167*			

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1805266 - EPA 5030 Water MS										
Matrix Spike Dup (1805266-MSD1)	**Source: 1805268-01**			Prepared: 05/22/18 Analyzed: 05/23/18						
Benzene	31.1	1.0	ug/l	33.3	ND	93.4	70-130	0.193	30	
Toluene	32.8	1.0	"	33.3	ND	98.3	70-130	0.365	30	
Ethylbenzene	39.8	1.0	"	33.3	ND	119	70-130	3.39	30	
m,p-Xylene	74.1	2.0	"	66.7	ND	111	70-130	3.73	30	
o-Xylene	34.3	1.0	"	33.3	ND	103	70-130	0.783	30	
Surrogate: 1,2-Dichloroethane-d4	*15.7*		*"*	*13.2*		*119*	*23-173*			
Surrogate: Toluene-d8	*13.1*		*"*	*13.3*		*98.6*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.2*		*"*	*13.3*		*99.3*	*21-167*			

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sitzman 1U Residential Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/23/18 06:49

Notes and Definitions

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