

**PDC Energy, Inc.**  
**Fourth Quarter 2017 Groundwater Monitoring Summary**

January 16, 2018

Former Ursula #2 Tank Battery  
NENE Section 28 T2N R66W  
Weld County, API # 05-123-09920  
Facility # 441395  
Remediation # 9281

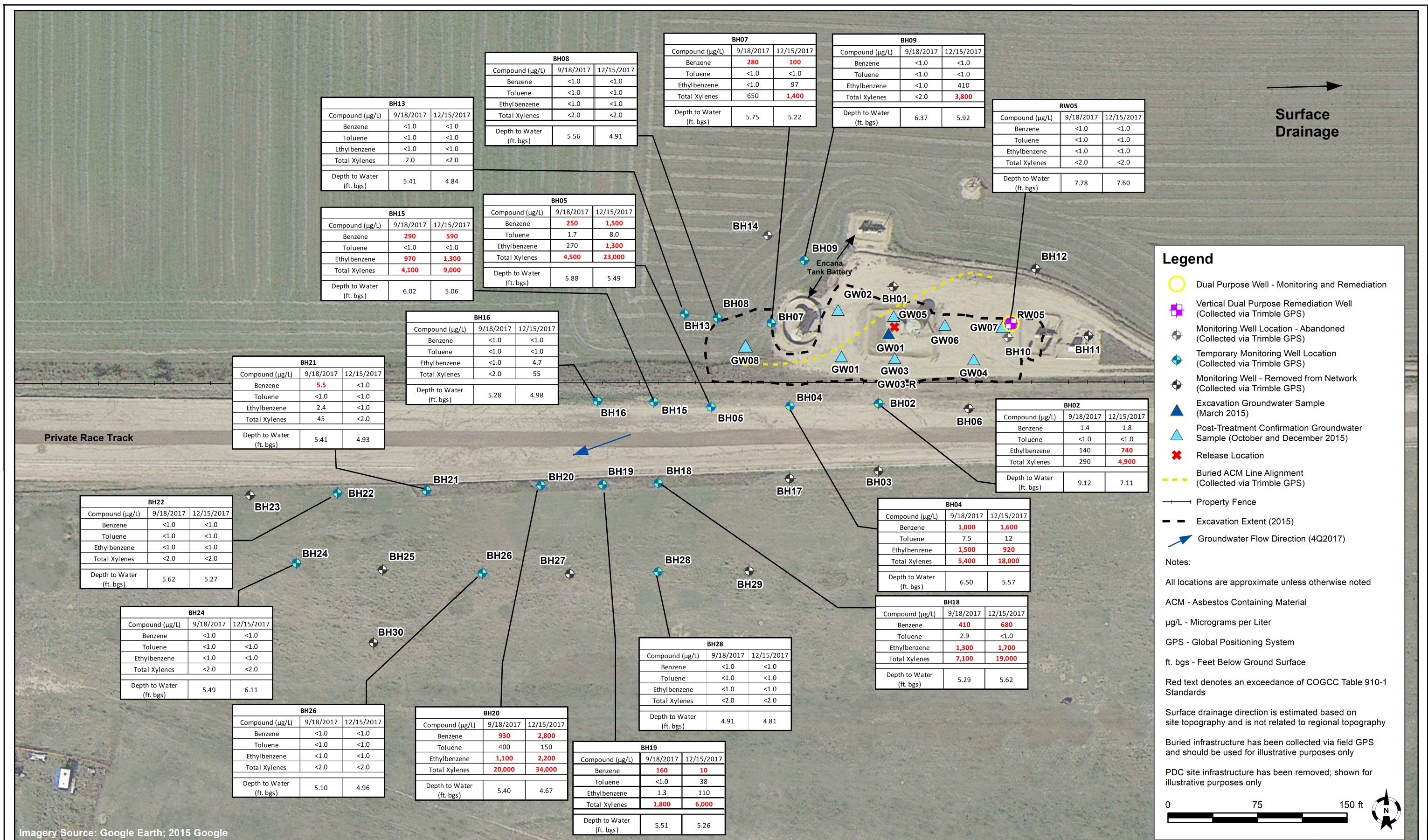
This groundwater monitoring summary has been prepared by Tasman Geosciences, Inc. for the former Ursula #2 tank battery. On December 15, 2017, groundwater monitoring was conducted at seventeen (17) temporary groundwater monitoring locations (BH02, BH04, BH05, BH07 – BH09, BH13, BH15, BH16, BH18 – BH22, BH24, BH26, and BH28) and one remediation well (RW05). All seventeen temporary monitoring wells were installed using a hand-auger, in active ranch or cropland. Temporary well casing was installed at each location and wells were purged, sampled, and subsequently abandoned. GPS points of the temporary wells were collected to ensure groundwater sample locations remain consistent between quarters. Monitoring wells BH01, BH03, BH06, BH10-BH12, BH14, BH17, BH23, BH25, BH27, BH29, and BH30 were previously removed from the monitoring well network and consequently not sampled. Eighteen (18) groundwater samples were submitted to Summit Scientific Laboratory for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by USEPA Method 8260B. Analytical results are summarized in Table 1 and the laboratory report is included as Attachment A. Sample locations and corresponding analytical results are illustrated on Figure 1. Fourth quarter 2017 analytical results indicate that BTEX concentrations are above applicable COGCC Table 910-1 groundwater standards in nine temporary monitoring wells (BH02, BH04, BH05, BH07, BH09, BH15, BH18, BH19, and BH20). BTEX concentrations are below COGCC regulatory standards in nine sample locations.

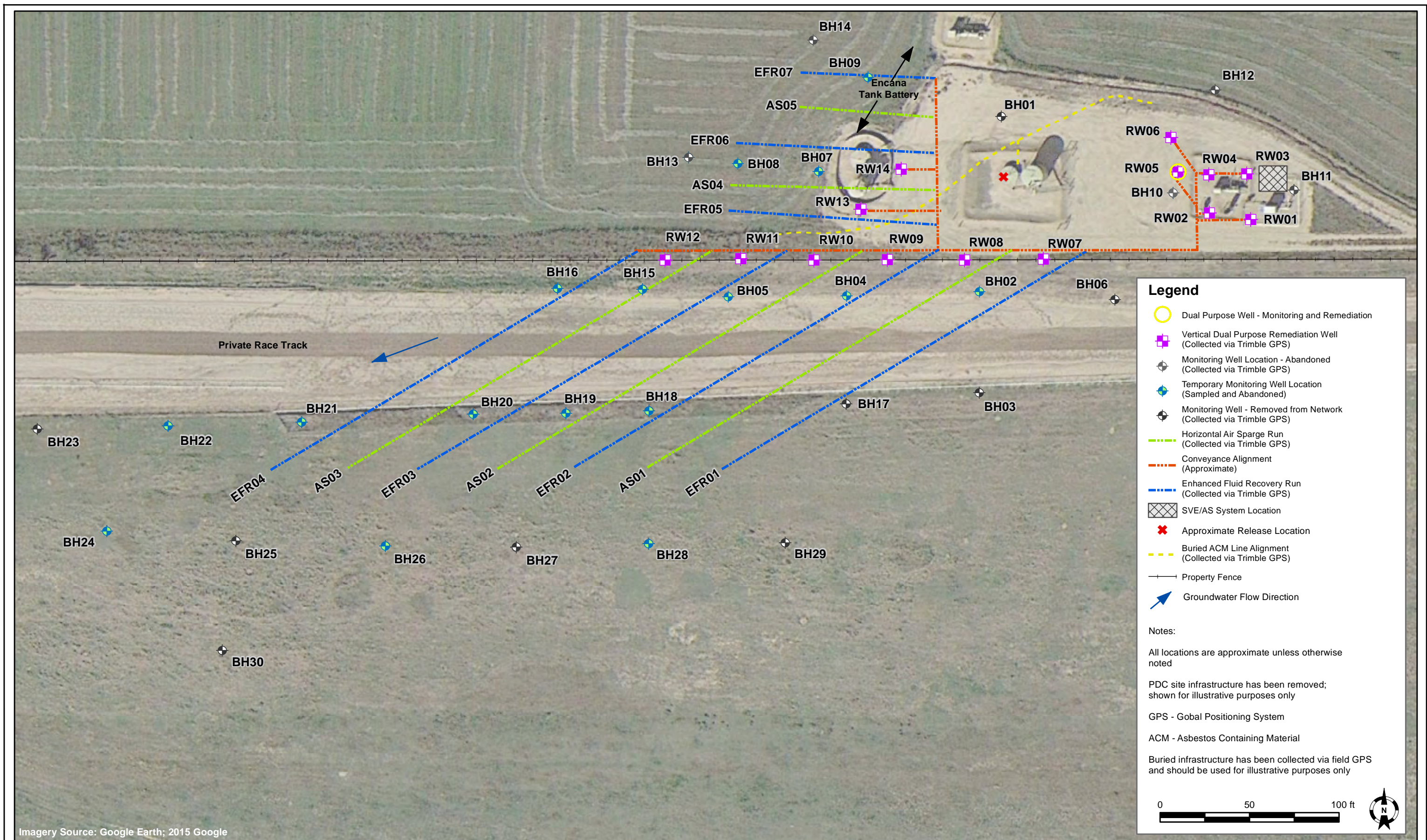
Three mobile enhanced fluid recovery (EFR) and air sparge (AS) events were conducted on site during third quarter 2016. A summary of the mobile EFR/AS operational data is provided in Table 2.

Between June 13 and June 27, 2016, a soil vapor extraction (SVE)/AS remediation system was installed on site to address remaining hydrocarbon impacts in soil and groundwater. The remediation system became operational on September 22, 2016. Operation and maintenance activities are conducted on a monthly basis. The remediation well network is illustrated on Figure 2. Volatile organic compound (VOC) are collected from the system effluent on a monthly basis, in order to monitor performance and calculate the total contaminant mass removed. During the fourth quarter 2017, 21.49 pounds of hydrocarbon mass were removed during October 2017. A total of 257.01 pounds of hydrocarbon mass have been removed by the SVE system since system

start-up. Operation of the SVE/AS remediation system will continue as the selected remediation strategy through the first quarter 2018.

First quarter 2018 groundwater sampling will be conducted during March 2018.





DATE:	October 2017
DESIGNED BY:	C. Hamlin
DRAWN BY:	D. Arnold



**PDC Energy, Inc. - DJ Basin**  
**Ursula #2 Tank Battery**  
 NENE Section 28, Township 2 North, Range 66 West  
 Weld County, Colorado

**REMEDIATION  
SYSTEM LAYOUT  
AND WELL  
LOCATION MAP**

**Figure  
2**

**TABLE 1**  
**FORMER URSULA #2 TANK BATTERY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample Location 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	3/23/2015	800	<1.0	750	420	~ 6
GW01	10/29/2015	1.1	<1.0	<1.0	27	~ 7
GW02	10/29/2015	3.2	<1.0	16	180	~ 7
GW03	11/13/2015	21	<1.0	260	3,600	~ 7
GW03-R	11/18/2015	<1.0	<1.0	11	61	~ 7
GW04	11/18/2015	<1.0	<1.0	<1.0	2.6	~ 7
GW05	11/22/2015	3.3	<1.0	55	250	~ 7
GW06	12/1/2015	<1.0	<1.0	42	8.2	~ 7
GW07	12/9/2015	<1.0	<1.0	1.3	3.2	~ 7
GW08	12/16/2015	<1.0	<1.0	10	130	~ 7
BH01	4/6/2015	<1.0	<1.0	<1.0	<1.0	6.53
BH01	Removed From Monitoring Well Network - June 2016					
BH02	4/6/2015	24	<1.0	1,600	13,000	7.02
BH02	9/21/2016	11	<1.0	810	4,300	7.63
BH02	12/13/2016	<1.0	<1.0	30	160	6.96
BH02	3/29/2017	5.5	<1.0	10	19,000	7.41
BH02	6/15/2017	2.7	<1.0	77	11,000	7.55
BH02	9/18/2017	1.4	<1.0	140	290	9.12
BH02	12/15/2017	1.8	<1.0	740	4,900	7.11
BH03	4/6/2015	<1.0	<1.0	<1.0	5.0	7.78
BH03	Removed From Monitoring Well Network - June 2016					
BH04	4/6/2015	1,100	6.4	920	8,900	6.99
BH04	9/21/2016	2,000	11	1,700	18,000	7.28
BH04	12/13/2016	2,600	9.3	1,400	19,000	5.76
BH04	3/29/2017	1,500	9.1	630	18,000	6.31
BH04	6/15/2017	850	5.2	1,200	11,000	5.54
BH04	9/18/2017	1,000	7.5	1,500	5,400	6.50
BH04	12/15/2017	1,600	12	920	18,000	5.90
BH05	4/6/2015	1,100	7.0	1,200	9,400	9.23
BH05	9/21/2016	1,700	980	1,300	18,000	7.02

**TABLE 1**  
**FORMER URSULA #2 TANK BATTERY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample Location 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>	
BH05	12/13/2016	1,200	7.4	1,200	15,000	5.44
BH05	3/29/2017	1,300	10	890	24,000	6.37
BH05	6/15/2017	1,100	6.8	1,000	14,000	4.45
BH05	9/18/2017	250	1.7	270	4,500	5.88
BH05	12/15/2017	1,500	8.0	1,300	23,000	5.48
BH06	4/6/2015	<1.0	<1.0	<1.0	<1.0	7.75
BH06	Removed From Monitoring Well Network - June 2016					
BH07	4/6/2015	450	<1.0	12	540	6.69
BH07	9/21/2016	1,500	<1.0	260	720	7.16
BH07	12/13/2016	670	<1.0	70	210	5.33
BH07	3/29/2017	650	<1.0	<1.0	3,500	5.80
BH07	6/15/2017	170	<1.0	68	240	5.07
BH07	9/18/2017	280	<1.0	<1.0	650	5.75
BH07	12/15/2017	100	<1.0	97	1,400	5.42
BH08	4/6/2015	15	<1.0	4.0	3.5	5.20
BH08	9/21/2016	<1.0	<1.0	<1.0	<1.0	7.50
BH08	12/13/2016	<1.0	<1.0	<1.0	<1.0	5.29
BH08	3/29/2017	<1.0	<1.0	<1.0	<2.0	5.54
BH08	6/15/2017	<1.0	<1.0	<1.0	<2.0	4.90
BH08	9/18/2017	<1.0	<1.0	<1.0	<2.0	5.56
BH08	12/15/2017	<1.0	<1.0	<1.0	<2.0	5.21
BH09	4/6/2015	28	200	130	2,700	6.00
BH09	9/21/2016	<1.0	<1.0	240	3,000	7.30
BH09	12/13/2016	<1.0	10	200	3,400	5.95
BH09	3/29/2017	<1.0	<1.0	<1.0	64	6.33
BH09	6/15/2017	<1.0	<1.0	55	340	5.50
BH09	9/18/2017	<1.0	<1.0	<1.0	<2.0	6.37
BH09	12/15/2017	<1.0	<1.0	410	3,800	5.92
BH10	4/6/2015	2.5	1.6	2.5	5.0	8.81
BH10	9/21/2016	<1.0	<1.0	<1.0	<1.0	9.13

**TABLE 1**  
**FORMER URSULA #2 TANK BATTERY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample Location 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>	
BH10	12/13/2016	<1.0	<1.0	<1.0	<1.0	7.45
BH10 <sup>(3)</sup>	3/29/2017	Abandoned				
BH11	4/10/2015	<1.0	<1.0	<1.0	<1.0	8.03
BH11	Removed From Monitoring Well Network - June 2016					
BH12	4/10/2015	<1.0	<1.0	<1.0	<1.0	9.16
BH12	Removed From Monitoring Well Network - June 2016					
BH13	4/10/2015	<1.0	<1.0	<1.0	<1.0	4.71
BH13	9/21/2016	<1.0	<1.0	3.3	2.2	7.91
BH13	12/13/2016	<1.0	<1.0	<1.0	<1.0	4.93
BH13	3/29/2017	<1.0	<1.0	<1.0	<2.0	5.17
BH13	6/15/2017	<1.0	<1.0	<1.0	<2.0	4.14
BH13	9/18/2017	<1.0	<1.0	<1.0	2.0	5.41
BH13	12/15/2017	<1.0	<1.0	<1.0	2.0	4.84
BH14	4/10/2015	<1.0	<1.0	<1.0	<1.0	5.53
BH14	Removed From Monitoring Well Network - June 2016					
BH15	2/15/2016	520	<1.0	1,200	620	6.81
BH15	9/21/2016	1,000	<1.0	1,200	12,000	7.22
BH15	12/13/2016	88	<1.0	250	1,800	5.31
BH15	3/29/2017	1,800	<1.0	3,700	41,000	5.97
BH15	6/15/2017	500	1.7	1,200	9,400	5.21
BH15	9/18/2017	290	<1.0	970	4,100	6.02
BH15	12/15/2017	590	<1.0	1,300	9,000	5.19
BH16	2/15/2016	<1.0	<1.0	<1.0	<1.0	6.76
BH16	9/21/2016	<1.0	<1.0	<1.0	<1.0	7.57
BH16	12/13/2016	<1.0	<1.0	<1.0	<1.0	5.05
BH16	3/29/2017	<1.0	<1.0	<1.0	1,200	5.51
BH16	6/15/2017	<1.0	<1.0	<1.0	<2.0	4.37
BH16	9/18/2017	<1.0	<1.0	<1.0	<2.0	5.28
BH16	12/15/2017	<1.0	<1.0	4.7	55	4.98

**TABLE 1**  
**FORMER URSULA #2 TANK BATTERY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample Location 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>	
BH17	2/15/2016	<1.0	<1.0	<1.0	<1.0	7.74
BH17	Removed From Monitoring Well Network - June 2016					
BH18	2/15/2016	100	44	140	4,200	7.29
BH18	9/21/2016	740	<1.0	840	7,200	7.34
BH18	12/13/2016	280	<1.0	480	4,100	5.18
BH18	3/29/2017	510	2.4	890	19,000	5.67
BH18	6/15/2017	170	1.5	280	7,200	4.78
BH18	9/18/2017	410	2.9	1,300	7,100	5.29
BH18	12/15/2017	680	<1.0	1,700	19,000	5.25
BH19	2/15/2016	320	210	250	3,000	6.97
BH19	9/21/2016	750	290	700	16,000	7.62
BH19	12/13/2016	61	450	280	6,900	5.70
BH19	3/29/2017	45	<1.0	11	22,000	5.53
BH19	6/15/2017	170	45	540	9,700	4.74
BH19	9/18/2017	160	<1.0	1.3	1,800	5.51
BH19	12/15/2017	10	38	110	6,000	5.24
BH20	2/15/2016	1,100	45	340	2,600	6.84
BH20	9/21/2016	1,800	130	100	18,000	7.64
BH20	12/13/2016	250	<1.0	5.6	2,100	5.54
BH20	3/29/2017	2,300	94	1,100	26,000	5.35
BH20	6/15/2017	1,100	12	860	13,000	4.41
BH20	9/18/2017	930	400	1,100	20,000	5.40
BH20	12/15/2017	2,800	150	2,200	34,000	4.86
BH21	2/15/2016	34	<1.0	1.7	7.1	7.19
BH21	9/21/2016	12	<1.0	13	220	7.81
BH21	12/13/2016	79	<1.0	<1.0	<1.0	5.85
BH21	3/29/2017	150	<1.0	<1.0	1,000	5.72
BH21	6/15/2017	<1.0	<1.0	3.1	52	4.43
BH21	9/18/2017	5.5	<1.0	2.4	45	5.41
BH21	12/15/2017	<1.0	<1.0	<1.0	<2.0	5.34

**TABLE 1**  
**FORMER URSULA #2 TANK BATTERY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample Location 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>	
BH22	2/18/2016	<1.0	<1.0	<1.0	<1.0	3.59
BH22	9/21/2016	<1.0	<1.0	<1.0	<1.0	7.49
BH22	12/13/2016	<1.0	<1.0	<1.0	<1.0	5.42
BH22	3/29/2017	<1.0	<1.0	<1.0	<2.0	5.85
BH22	6/15/2017	<1.0	<1.0	<1.0	<2.0	4.42
BH22	9/18/2017	<1.0	<1.0	<1.0	<2.0	5.62
BH22	12/15/2017	<1.0	<1.0	<1.0	<2.0	5.37
BH23	2/18/2016	<1.0	<1.0	<1.0	<1.0	3.79
BH23	Removed From Monitoring Well Network - June 2016					
BH24	2/18/2016	<1.0	<1.0	<1.0	<1.0	3.64
BH24	9/21/2016	2.4	<1.0	3.6	<1.0	7.92
BH24	12/13/2016	<1.0	<1.0	<1.0	<1.0	5.36
BH24	3/29/2017	<1.0	<1.0	<1.0	<2.0	5.92
BH24	6/15/2017	<1.0	<1.0	<1.0	<2.0	4.53
BH24	9/18/2017	<1.0	<1.0	<1.0	<2.0	5.49
BH24	12/15/2017	<1.0	<1.0	<1.0	<2.0	5.31
BH25	2/18/2016	<1.0	<1.0	<1.0	<1.0	3.64
BH25	Removed From Monitoring Well Network - June 2016					
BH26	2/18/2016	<1.0	<1.0	<1.0	<1.0	3.40
BH26	9/21/2016	<1.0	<1.0	<1.0	<1.0	8.47
BH26	12/13/2016	<1.0	<1.0	<1.0	<1.0	5.23
BH26	3/29/2017	<1.0	<1.0	<1.0	<2.0	5.37
BH26	6/15/2017	<1.0	<1.0	<1.0	<2.0	4.37
BH26	9/18/2017	<1.0	<1.0	<1.0	<2.0	5.10
BH26	12/15/2017	<1.0	<1.0	<1.0	<2.0	4.96
BH27	2/18/2016	<1.0	<1.0	<1.0	<1.0	3.55
BH27	Removed From Monitoring Well Network - June 2016					
BH28	2/18/2016	<1.0	<1.0	<1.0	<1.0	3.42
BH28	9/21/2016	<1.0	<1.0	<1.0	<1.0	7.66

**TABLE 1**  
**FORMER URSULA #2 TANK BATTERY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample Location 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>	
BH28	12/13/2016	<1.0	<1.0	<1.0	<1.0	5.02
BH28	3/29/2017	<1.0	<1.0	<1.0	<2.0	5.07
BH28	6/15/2017	<1.0	<1.0	<1.0	<2.0	4.36
BH28	9/18/2017	<1.0	<1.0	<1.0	<2.0	4.91
BH28	12/15/2017	<1.0	<1.0	<1.0	<2.0	4.81
BH29	2/18/2016	<1.0	<1.0	<1.0	<1.0	3.48
BH29	Removed From Monitoring Well Network - June 2016					
BH30	2/18/2016	<1.0	<1.0	<1.0	<1.0	2.55
BH30	Removed From Monitoring Well Network - June 2016					
RW05	3/30/2017	<1.0	<1.0	<1.0	<2.0	7.94
RW05	6/15/2017	<1.0	<1.0	<1.0	<2.0	7.22
RW05	9/18/2017	<1.0	<1.0	<1.0	<2.0	7.78
RW05	12/15/2017	<1.0	<1.0	<1.0	<2.0	7.60

**Notes:**

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective January 30, 2015.
2. Depth to water measurements collected prior to fourth quarter 2016 were measured from top of casing or ground surface for monitoring well samples and excavation samples respectively. Subsequent monitoring well measurements and stick-ups were collected from top of casing and used to adjust water levels to reflect depth of water from ground surface.
3. Temporary well not installed due to hand auger refusal; RW05 installed adjacent as replacement well.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L= Micrograms per liter

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

**TABLE 2**  
**FORMER URSULA 2 TANK BATTERY**  
**EFR / AS OPERATIONAL SUMMARY TABLE**

Date	EFR Wells	Total EFR/AS Duration (hours)	Approximate Gallons Extracted	Air Sparge Wells	Air Injection Pressure (psi)	Average Air Flow Rate (cfm)
<b>Third Quarter 2016 Data</b>						
7/15/2016	RW03, RW08, RW10, RW12, RW14	6	1260	RW04, RW07, RW09, RW11, RW13	20	21
7/29/2016	EFR01, EFR02, EFR03, EFR04, EFR06, EFR07	6	210	AS02, AS03, AS04, AS05	20	10
8/11/2016	RW06, RW09, RW10, RW12, RW14	6	1470	RW04, RW05, RW08, RW11, RW13	20	14
<b>Totals</b>		<b>18</b>	<b>2940</b>		-	-

**Notes:**

EFR = Enhanced fluid recovery

AS = Air sparge

psi = Pounds per square inch

cfm = Cubic feet per minute

## **ATTACHMENT A**

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 26, 2017

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 12/15/17 16:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury  
Laboratory Manager



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH09	1712194-01	Water	12/15/17 09:40	12/15/17 16:45
BH13	1712194-02	Water	12/15/17 09:55	12/15/17 16:45
BH08	1712194-03	Water	12/15/17 10:05	12/15/17 16:45
RW05	1712194-04	Water	12/15/17 10:20	12/15/17 16:45
BH24	1712194-05	Water	12/15/17 10:50	12/15/17 16:45
BH22	1712194-06	Water	12/15/17 10:50	12/15/17 16:45
BH26	1712194-07	Water	12/15/17 11:05	12/15/17 16:45
BH28	1712194-08	Water	12/15/17 11:05	12/15/17 16:45
BH21	1712194-09	Water	12/15/17 11:15	12/15/17 16:45
BH20	1712194-10	Water	12/15/17 11:15	12/15/17 16:45
BH19	1712194-11	Water	12/15/17 11:25	12/15/17 16:45
BH18	1712194-12	Water	12/15/17 11:30	12/15/17 16:45
BH16	1712194-13	Water	12/15/17 12:25	12/15/17 16:45
BH02	1712194-14	Water	12/15/17 12:35	12/15/17 16:45
BH04	1712194-15	Water	12/15/17 12:00	12/15/17 16:45
BH05	1712194-16	Water	12/15/17 12:10	12/15/17 16:45
BH15	1712194-17	Water	12/15/17 12:20	12/15/17 16:45
BH07	1712194-18	Water	12/15/17 12:30	12/15/17 16:45

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

1712194.1

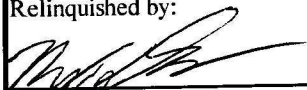

741 Corporate Circle Suite I ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 2

Client: PDC/TASMAN  
Address: 6399 N Pecos St  
City/State/Zip: Denver / CO / 80221  
Phone: 9704816909 Fax: \_\_\_\_\_  
Sampler Name: Max Dahlgren

Project Manager: ~~Christine~~ Christine Hamlin, Mark Longhurst  
E-Mail: chamlin@tasman-gee.com Mark.Longhurst@PDC.COM  
Project Name: Ursula #2 URSULA  
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																
BH09	12-15-17	0940	3			X		X					X															
BH13		0955																										
BH08		1005																										
RW05		1020																										
BH24		1050																										
BH22		1050																										
BH26		1105																										
BH28		1105																										
BH21		1115																										
BH20		1115																										

Relinquished by: 	Date/Time: 12-15-17 16:45	Received by: 	Date/Time: 12-15-17 16:45	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: <u>23</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:		

# Summit Scientific

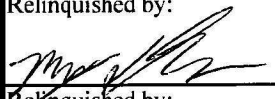

1712194.2

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

Page 2 of 2

Client: PDC/Tasman  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: MD

Project Manager: Christine Hamlin, Mark Longhurst  
E-Mail: \_\_\_\_\_  
Project Name: Ursula #2 URSULA  
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)	BT	EX													
BH19	12-15-17	1125	3			X		X					X													
BH18	↓	1130	↓																							
BH16	↓	1225	↓																							
BH02	↓	1235	↓																							
BH04	↓	1200	↓																							
BH05	↓	1210	↓																							
BH15	↓	1220	↓																							
BH07	↓	1230	↓																							
Relinquished by: 				Date/Time: 12-15-17 16:45		Received by: 				Date/Time: 12-15-17 16:45		Turn Around Time (Check)												Notes:		
												Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>														
Relinquished by:				Date/Time:		Received by:				Date/Time:		Sample Integrity:														
Relinquished by:				Date/Time:		Received in Lab by:				Date/Time:		Temperature Upon Receipt: <u>2.3</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														

1712194

## Sample Receipt Checklist

S2 Work Order: \_\_\_\_\_

Client: PDC HasmanClient Project ID: Ursula #2Shipped 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)	2.3				

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> ?				
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> ?	✓			
Was adequate sample volume provided <sup>(1)</sup> ?	✓			
If custody seals are present, are they intact <sup>(1)</sup> ?			✓	
Are short holding time analytes or samples with HTs due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	✓			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	✓			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		✓		
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?			✓	
Note the type of preservative in the Comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , ect				
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?			✓	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

Nuri P.  
 Custodian Printed Name

12-15-17  
 Signature or Initials of Custodian

17:30  
 Date/Time



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH09**  
**1712194-01 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	<b>410</b>	100	"	100	"	"	"	"	
Xylenes (total)	<b>3800</b>	200	"	"	"	"	"	"	

Date Sampled: **12/15/17 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		105 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH13**  
**1712194-02 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/15/17 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		103 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH08**  
**1712194-03 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/15/17 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		101 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.7 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**RW05**  
**1712194-04 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/15/17 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		102 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.9 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH24**  
**1712194-05 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/15/17 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		101 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH22**  
**1712194-06 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/15/17 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		102 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.7 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH26**  
**1712194-07 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/15/17 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		103 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.2 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH28**  
**1712194-08 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/15/17 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		105 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.3 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH21**  
**1712194-09 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/15/17 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		102 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH20**  
**1712194-10 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>2800</b>	100	ug/l	100	1712260	12/23/17	12/23/17	EPA 8260B	
<b>Toluene</b>	<b>150</b>	1.0	"	1	"	"	"	"	
<b>Ethylbenzene</b>	<b>2200</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>34000</b>	200	"	"	"	"	"	"	

Date Sampled: **12/15/17 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		118 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		104 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		105 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH19**  
**1712194-11 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>10</b>	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
<b>Toluene</b>	<b>38</b>	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>110</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>6000</b>	200	"	100	"	"	"	"	

Date Sampled: **12/15/17 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		103 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH18**  
**1712194-12 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>680</b>	100	ug/l	100	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
<b>Ethylbenzene</b>	<b>1700</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>19000</b>	200	"	"	"	"	"	"	

Date Sampled: **12/15/17 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		106 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH16**  
**1712194-13 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>4.7</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>55</b>	2.0	"	"	"	"	"	"	

Date Sampled: **12/15/17 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		101 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH02**  
**1712194-14 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>1.8</b>	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>740</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>4900</b>	200	"	"	"	"	"	"	

Date Sampled: **12/15/17 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		103 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH04**  
**1712194-15 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>1600</b>	100	ug/l	100	1712260	12/23/17	12/23/17	EPA 8260B	
<b>Toluene</b>	<b>12</b>	1.0	"	1	"	"	"	"	
<b>Ethylbenzene</b>	<b>920</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>18000</b>	200	"	"	"	"	"	"	

Date Sampled: **12/15/17 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		117 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		107 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH05**  
**1712194-16 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>1500</b>	100	ug/l	100	1712260	12/23/17	12/23/17	EPA 8260B	
<b>Toluene</b>	<b>8.0</b>	1.0	"	1	"	"	"	"	
<b>Ethylbenzene</b>	<b>1300</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>23000</b>	200	"	"	"	"	"	"	

Date Sampled: **12/15/17 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		107 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH15**  
**1712194-17 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>590</b>	100	ug/l	100	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
<b>Ethylbenzene</b>	<b>1300</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>9000</b>	200	"	"	"	"	"	"	

Date Sampled: **12/15/17 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		105 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.4 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**BH07**  
**1712194-18 (Water)**

**Summit Scientific**

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

Date Sampled: **12/15/17 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>100</b>	1.0	ug/l	1	1712260	12/23/17	12/23/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>97</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>1400</b>	200	"	100	"	"	"	"	

Date Sampled: **12/15/17 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		103 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

## 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 1712260 - EPA 5030 Water MS

##### Blank (1712260-BLK1)

Prepared & Analyzed: 12/23/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	15.0		"	13.3	113	37-154				
Surrogate: Toluene-d8	13.3		"	13.3	99.7	45-149				
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3	94.4	45-146				

##### LCS (1712260-BS1)

Prepared & Analyzed: 12/23/17

Benzene	42.5	1.0	ug/l	33.3	128	51-132				
Toluene	44.6	1.0	"	33.3	134	51-138				
Ethylbenzene	44.6	1.0	"	33.1	135	58-146				
m,p-Xylene	84.5	2.0	"	66.5	127	57-144				
o-Xylene	38.4	1.0	"	32.7	118	53-146				
Surrogate: 1,2-Dichloroethane-d4	16.7		"	13.3	125	37-154				
Surrogate: Toluene-d8	14.1		"	13.3	106	45-149				
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3	96.5	45-146				

##### Matrix Spike (1712260-MS1)

Source: 1712194-04

Prepared & Analyzed: 12/23/17

Benzene	40.9	1.0	ug/l	33.3	ND	123	34-141			
Toluene	41.8	1.0	"	33.3	ND	125	27-151			
Ethylbenzene	44.1	1.0	"	33.1	ND	133	29-160			
m,p-Xylene	81.7	2.0	"	66.5	ND	123	20-166			
o-Xylene	37.8	1.0	"	32.7	ND	116	33-159			
Surrogate: 1,2-Dichloroethane-d4	15.0		"	13.3	112	37-154				
Surrogate: Toluene-d8	13.6		"	13.3	102	45-149				
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3	98.9	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

**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 1712260 - EPA 5030 Water MS**

Matrix Spike Dup (1712260-MSD1)		Source: 1712194-04			Prepared & Analyzed: 12/23/17					
Benzene	40.5	1.0	ug/l	33.3	ND	121	34-141	0.983	32	
Toluene	41.2	1.0	"	33.3	ND	124	27-151	1.52	25	
Ethylbenzene	43.9	1.0	"	33.1	ND	133	29-160	0.455	50	
m,p-Xylene	81.7	2.0	"	66.5	ND	123	20-166	0.0245	36	
o-Xylene	38.0	1.0	"	32.7	ND	116	33-159	0.528	26	
Surrogate: 1,2-Dichloroethane-d4	15.8		"	13.3		119	37-154			
Surrogate: Toluene-d8	13.7		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		102	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/26/17 15:06

### 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