

PDC Energy, Inc.
Second Quarter 2017 Groundwater Monitoring Summary

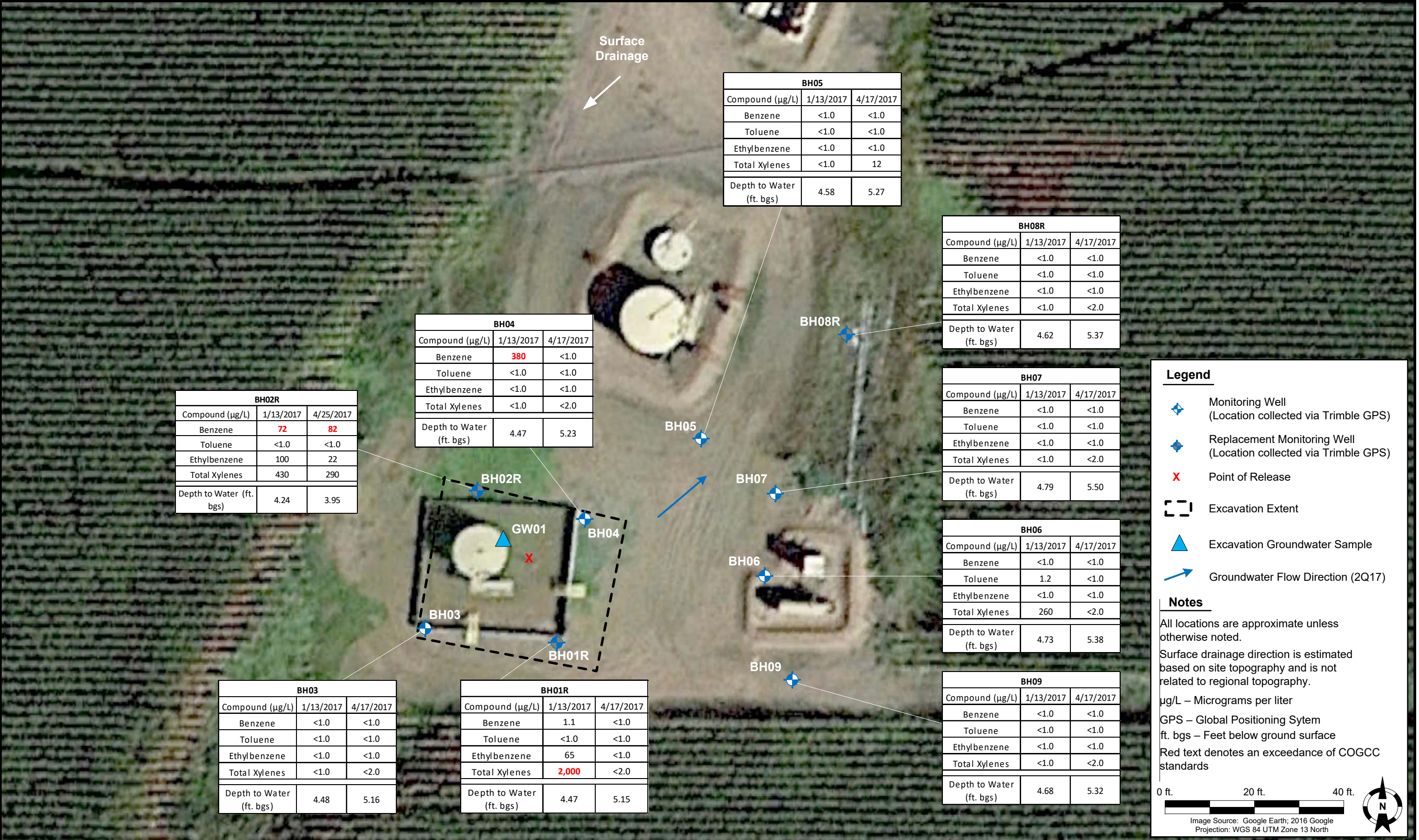
July 18, 2017

Jerke UP 8-7 Tank Battery
SENE S7 T4N R65W
Weld County, API # 05-123-13481
Facility ID # 245686
Remediation # 9300

This groundwater summary has been prepared by Tasman Geosciences, Inc. for the Jerke UP 8-7 tank battery. On April 17 and April 25, 2017, groundwater samples were collected from all nine monitoring well locations (BH01R – BH02R, BH03 – BH07, BH08R, and BH09). Nine 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 reports are included as Attachment A. Sample locations and corresponding analytical results are illustrated on Figure 1. Second quarter 2017 analytical results indicate that the benzene concentration is above the applicable COGCC Table 910-1 groundwater standard at monitoring well BH02R. BTEX concentrations are below COGCC regulatory standards at the remaining eight well locations.

Enhanced fluid recovery (EFR) and air sparge (AS) was initiated at the site during the first quarter 2014. A summary of the EFR/AS operational data is provided in Table 2. EFR/AS will remain as the selected remediation strategy for this site through the third quarter 2017.

The third quarter 2017 groundwater sampling event will be conducted during July 2017.



DATE: May 3, 2017

DESIGNED BY: C. Hamlin

DRAWN BY: T. Blessing



Tasman Geosciences, Inc.
6899 Pecos Street – Unit C
Denver, CO 80221

PDC Energy, Inc. – DJ Basin
Jerke UP 8-7 Tank Battery
SENE, Section 7, Township 4 North, Range 65 West
Weld County, Colorado

**GROUNDWATER
ANALYTICAL RESULTS
MAP**

**FIGURE
1**

TABLE 1
JERKE UP 8-7 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 ⁽²⁾ (feet)
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	
GW01	11/12/2013	230	370	160	2,200	~ 5
BH01	1/10/2014	270	2,300	390	5,800	7.41
BH01	4/29/2014	19	130	160	3,100	7.52
BH01	7/29/2014	4.3	<1.0	54	450	5.12
BH01	10/27/2014	1.6	<1.0	9.0	43	4.80
BH01	1/22/2015	2.2	2.4	73.0	690	6.92
BH01	4/20/2015	<1.0	<1.0	<1.0	<1.0	7.49
BH01	7/27/2015	<1.0	<1.0	<1.0	<1.0	4.02
BH01	10/6/2015	1.6	<1.0	56	280	4.67
BH01	1/28/2016	13	1.3	230	1,100	6.68
BH01	4/20/2016	<1.0	<1.0	<1.0	<1.0	6.44
BH01	7/18/2016	<1.0	<1.0	35	130	5.25
BH01	10/11/2016	1.5	<1.0	29	180	0.94
BH01R	1/13/2017	1.1	<1.0	65	2,000	4.47
BH01R	4/17/2017	<1.0	<1.0	<1.0	<2.0	5.15
BH02	1/10/2014	920	4.8	54	2,300	6.98
BH02	4/29/2014	180	<1.0	67	370	7.13
BH02	7/29/2014	27	<1.0	8.0	49	5.07
BH02	10/27/2014	65	<1.0	20	140	4.42
BH02	1/22/2015	14	<1.0	8.8	65	6.20
BH02	4/20/2015	<1.0	<1.0	<1.0	13	5.44
BH02	7/27/2015	1.5	<1.0	1.0	8.3	4.42
BH02	10/6/2015	19	<1.0	1.8	13	4.74
BH02	1/28/2016	1.7	<1.0	<1.0	11	6.79
BH02	4/20/2016	<1.0	<1.0	<1.0	<1.0	6.18
BH02	7/18/2016	15	<1.0	<1.0	2.8	5.18
BH02	10/11/2016	3.4	<1.0	<1.0	<1.0	1.66
BH02R	1/13/2017	72	<1.0	100	430	4.24
BH02R ⁽⁴⁾	4/25/2017	82	<1.0	22	290	3.95
BH03	1/10/2014	1.1	1.1	15	240	7.08
BH03	4/29/2014	<1.0	<1.0	2.0	22	7.37
BH03	7/29/2014	<1.0	<1.0	<1.0	3.9	4.59
BH03	10/27/2014	<1.0	<1.0	<1.0	<1.0	4.42
BH03	1/22/2015	<1.0	<1.0	<1.0	<1.0	6.58

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Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water ⁽²⁾ (feet)
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	
BH03	4/20/2015	<1.0	<1.0	<1.0	<1.0	7.14
BH03	7/27/2015	<1.0	<1.0	<1.0	<1.0	4.00
BH03	10/6/2015	<1.0	<1.0	<1.0	<1.0	4.53
BH03	1/28/2016	<1.0	<1.0	<1.0	<1.0	6.61
BH03	4/20/2016	<1.0	<1.0	<1.0	<1.0	6.35
BH03	7/18/2016	<1.0	<1.0	<1.0	<1.0	5.11
BH03	10/11/2016	<1.0	<1.0	<1.0	<1.0	1.59
BH03	1/13/2017	<1.0	<1.0	<1.0	<1.0	4.48
BH03	4/17/2017	<1.0	<1.0	<1.0	<2.0	5.16
BH04	1/10/2014	12,000	7,600	940	14,000	4.35
BH04	4/29/2014	150	1.4	33	330	4.64
BH04	7/29/2014	110	4.0	4.8	31	2.03
BH04	10/27/2014	NS	NS	NS	NS	NM
BH04	1/22/2015	9.5	<1.0	24	320	6.63
BH04	4/20/2015	NS	NS	NS	NS	7.09
BH04	7/27/2015	80	<1.0	11	270	4.04
BH04	10/6/2015	150	<1.0	5.8	6.2	4.65
BH04	1/28/2016	2.3	<1.0	<1.0	8.9	6.62
BH04	4/20/2016	<1.0	<1.0	<1.0	<1.0	6.11
BH04	7/18/2016	<1.0	<1.0	<1.0	<1.0	4.81
BH04	10/11/2016	100	<1.0	<1.0	<1.0	1.67
BH04	1/13/2017	380	<1.0	<1.0	<1.0	4.47
BH04	4/17/2017	<1.0	<1.0	<1.0	<2.0	5.23
BH05	1/10/2014	1,800	240	230	3,100	4.13
BH05	4/29/2014	1.8	<1.0	<1.0	<1.0	4.47
BH05	7/29/2014	<1.0	<1.0	<1.0	<1.0	1.65
BH05	10/27/2014	5.6	<1.0	<1.0	<1.0	1.52
BH05	1/22/2015	<1.0	<1.0	<1.0	<1.0	3.80
BH05	4/20/2015	<1.0	<1.0	<1.0	<1.0	4.41
BH05	7/27/2015	<1.0	<1.0	<1.0	<1.0	1.30
BH05	10/6/2015	<1.0	<1.0	<1.0	<1.0	1.83
BH05	1/28/2016	180	<1.0	10	64	3.84
BH05	4/20/2016	<1.0	<1.0	<1.0	<1.0	3.67
BH05	7/18/2016	<1.0	<1.0	<1.0	<1.0	2.75
BH05	10/11/2016	<1.0	<1.0	<1.0	<1.0	1.76

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Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water ⁽²⁾ (feet)
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	
BH05	1/13/2017	<1.0	<1.0	<1.0	<1.0	4.58
BH05	4/17/2017	<1.0	<1.0	<1.0	12	5.27
BH06	1/10/2014	<1.0	<1.0	<1.0	<1.0	4.63
BH06	4/29/2014	<1.0	<1.0	<1.0	<1.0	4.66
BH06	7/29/2014	1.3	<1.0	<1.0	<1.0	2.07
BH06	10/27/2014	<1.0	<1.0	<1.0	<1.0	1.95
BH06	1/22/2015	<1.0	<1.0	<1.0	<1.0	3.83
BH06	4/20/2015	<1.0	<1.0	<1.0	<1.0	4.46
BH06	7/27/2015	<1.0	<1.0	<1.0	<1.0	1.35
BH06	10/6/2015	2.2	<1.0	<1.0	<1.0	1.84
BH06	1/28/2016	<1.0	<1.0	<1.0	<1.0	3.88
BH06	4/20/2016	<1.0	<1.0	<1.0	<1.0	3.72
BH06	7/18/2016	<1.0	<1.0	<1.0	<1.0	2.48
BH06	10/11/2016	<1.0	<1.0	<1.0	<1.0	1.90
BH06	1/13/2017	<1.0	1.2	<1.0	260	4.73
BH06	4/17/2017	<1.0	<1.0	<1.0	<2.0	5.38
BH07	4/29/2014	<1.0	<1.0	<1.0	<1.0	5.51
BH07	7/29/2014	<1.0	<1.0	<1.0	<1.0	2.90
BH07	10/27/2014	<1.0	<1.0	<1.0	<1.0	2.73
BH07	1/22/2015	<1.0	<1.0	<1.0	<1.0	4.63
BH07	4/20/2015	<1.0	<1.0	<1.0	<1.0	5.44
BH07	7/27/2015	<1.0	<1.0	<1.0	<1.0	2.36
BH07	10/6/2015	<1.0	<1.0	<1.0	<1.0	2.83
BH07	1/28/2016	<1.0	<1.0	<1.0	<1.0	4.20
BH07	4/20/2016	<1.0	<1.0	<1.0	<1.0	3.96
BH07	7/18/2016	<1.0	<1.0	<1.0	<1.0	2.72
BH07	10/11/2016	<1.0	<1.0	<1.0	<1.0	1.98
BH07	1/13/2017	<1.0	<1.0	<1.0	<1.0	4.79
BH07	4/17/2017	<1.0	<1.0	<1.0	<2.0	5.50
BH08	4/29/2014	<1.0	<1.0	<1.0	<1.0	7.38
BH08	7/29/2014	<1.0	<1.0	<1.0	<1.0	3.78
BH08	10/27/2014	<1.0	<1.0	<1.0	<1.0	3.04
BH08	1/22/2015	<1.0	<1.0	<1.0	<1.0	5.51
BH08	4/20/2015	<1.0	<1.0	<1.0	<1.0	6.31
BH08	7/27/2015	<1.0	<1.0	<1.0	<1.0	3.24

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Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water ⁽²⁾ (feet)
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	
BH08	10/6/2015	<1.0	<1.0	<1.0	<1.0	3.71
BH08	1/28/2016	<1.0	<1.0	<1.0	<1.0	5.72
BH08	4/20/2016	<1.0	<1.0	<1.0	<1.0	5.54
BH08	7/18/2016	<1.0	<1.0	<1.0	<1.0	4.35
BH08 ⁽³⁾	10/11/2016	<1.0	<1.0	<1.0	<1.0	1.78
BH08R	1/13/2017	<1.0	<1.0	<1.0	<1.0	4.62
BH08R	4/17/2017	<1.0	<1.0	<1.0	<2.0	5.37
BH09	4/29/2014	<1.0	<1.0	<1.0	<1.0	4.59
BH09	7/29/2014	<1.0	<1.0	<1.0	<1.0	2.00
BH09	10/27/2014	<1.0	<1.0	<1.0	<1.0	1.85
BH09	1/22/2015	<1.0	<1.0	<1.0	<1.0	3.76
BH09	4/20/2015	<1.0	<1.0	<1.0	<1.0	4.53
BH09	7/27/2015	<1.0	<1.0	<1.0	<1.0	1.43
BH09	10/6/2015	<1.0	<1.0	<1.0	<1.0	2.01
BH09	1/28/2016	<1.0	<1.0	<1.0	<1.0	3.96
BH09	4/20/2016	<1.0	<1.0	<1.0	<1.0	3.80
BH09	7/18/2016	<1.0	<1.0	<1.0	<1.0	2.53
BH09	10/11/2016	<1.0	<1.0	<1.0	<1.0	1.84
BH09	1/13/2017	<1.0	<1.0	<1.0	<1.0	4.68
BH09	4/17/2017	<1.0	<1.0	<1.0	<2.0	5.32

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 were collected from top of casing and adjusted using survey data and product thickness to reflect depth of water from ground surface.
3. BH08 fourth quarter 2016 depth to water was measured from top of casing.
4. BH02R second quarter 2017 was collected after redeveloping well to remove sediment, and letting the well recover for 15 minutes.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

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

NS = Not sampled

NM = Not measured

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

TABLE 2
JERKE UP 8-7 TANK BATTERY
EFR / AS OPERATIONAL SUMMARY TABLE

Date	EFR Wells	Total EFR/AS Duration (hours)	Approximate Gallons Extracted	AS Wells	Air Injection Pressure (psi)	Average Air Flow Rate (cfm)
First Quarter 2014						
1/30/2014	BH01, BH02, BH04, BH05	6	90	BH01, BH02, BH04, BH05	10	36
2/25/2014		5	0		10	8.3
Quarterly Totals		11	90		-	-
Second Quarter 2014						
4/7/2014	BH01, BH02, BH04, BH05	6	120	BH01, BH02, BH04, BH05	10	36.7
4/21/2014	BH01, BH02, BH03, BH04, BH05	6.5	120	BH01, BH02, BH03, BH04, BH05	20	28.4
5/9/2014		8	90		20	35
5/23/2014		6	20		20	24.2
6/9/2014		6	20		20	20
Quarterly Totals		32.5	370		-	-
Third Quarter 2014						
7/2/2014	BH01, BH02, BH03, BH04, BH05	7	150	BH01, BH02, BH03, BH04, BH05	25	42
7/18/2014		6	0		15	13.4
9/25/2014		6	100		20	20
Quarterly Totals		19	250		-	-
Fourth Quarter 2014						
10/17/2014	BH01, BH02, BH03, BH05	6	225	BH01, BH02, BH03, BH05	15	17.5
11/3/2014	BH01, BH02, BH03, BH04, BH05	6	50	BH01, BH02, BH03, BH04, BH05	20	30
11/18/2014		6	80		20	30
12/7/2014		6	100		20	31.2
12/20/2014		6	75		20	26
Quarterly Totals		30	530		-	-
First Quarter 2015						
1/9/2015	BH01, BH02, BH03, BH04, BH05	6	0	BH01, BH02, BH03, BH04, BH05	20	25
1/26/2015		6	0		20	25
2/8/2015		6	30		25	35
3/6/2015		6	36		20	27
3/17/2015		6	100		20	35
Quarterly Totals		30	166		-	-

TABLE 2
JERKE UP 8-7 TANK BATTERY
EFR / AS OPERATIONAL SUMMARY TABLE

Date	EFR Wells	Total EFR/AS Duration (hours)	Approximate Gallons Extracted	AS Wells	Air Injection Pressure (psi)	Average Air Flow Rate (cfm)
Second Quarter 2015						
4/6/2015	BH01, BH02, BH03, BH04, BH05	6	10	BH01, BH02, BH03, BH04, BH05	20	28.6
4/13/2015		6	30		20	20.8
4/30/2015		6	0		20	19
5/14/2015		6	80		20	21.2
5/28/2015		6	15		20	27
6/11/2015	BH02, BH03, BH04, BH05	6	40	BH02, BH03, BH04, BH05	20	27.5
6/22/2015	BH01, BH02, BH03, BH04, BH05	6	35	BH01, BH02, BH03, BH04, BH05	20	22.8
Quarterly Totals		42	210		-	-
Third Quarter 2015						
7/9/2015	BH01, BH02, BH03, BH04, BH05	6	184	BH01, BH02, BH03, BH04, BH05	20	22
7/23/2015		6	45		20	29
8/6/2015	BH02, BH03, BH04, BH05	6	30	BH02, BH03, BH04, BH05	20	27.5
8/20/2015	BH01, BH02, BH03, BH04, BH05	6	80	BH01, BH02, BH03, BH04, BH05	20	21.3
Quarterly Totals		24	339		-	-
Fourth Quarter 2015						
10/13/2015	BH01, BH02, BH03, BH04, BH05	6	42	BH03, BH04, BH05	20	23.3
10/27/2015		6	80	BH01, BH02, BH03, BH04, BH05	20	25
11/9/2015	BH01, BH02, BH03, BH05	6	150	BH04	20	35
11/24/2015	BH01, BH02, BH03, BH04, BH05	6	92	BH02, BH04	20	27.5
12/7/2015		6	184		20	27.5
Quarterly Totals		30	548		-	-

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JERKE UP 8-7 TANK BATTERY
EFR / AS OPERATIONAL SUMMARY TABLE

Date	EFR Wells	Total EFR/AS Duration (hours)	Approximate Gallons Extracted	AS Wells	Air Injection Pressure (psi)	Average Air Flow Rate (cfm)
First Quarter 2016						
1/7/2016	BH01, BH02, BH03, BH04, BH05	6	90	BH02, BH04	20	25
1/26/2016		6	80		20	32.5
1/30/2016	BH01, BH02, BH03, BH05	6	160	None	0	0
2/17/2016	BH01, BH02, BH03, BH04, BH05	6	84	BH02, BH04	20	27.5
3/1/2016	BH01, BH02, BH03, BH04, BH05, Pipe	6	80		20	25
3/17/2016		6	350		25	30
Quarterly Totals		36	844		-	-
Second Quarter 2016						
4/1/2016	BH01, BH02, BH03, BH04, BH05, Pipe	6	240	BH02, BH04	20	40.5
4/15/2016	BH01, BH02, BH03, BH07, Pipe	6	80	BH01, BH02, BH03, BH04, BH05, BH07	20	25
4/28/2016		6	80		20	28.8
5/12/2016		6	45		15	21.9
5/25/2016		6	84		20	30.8
6/9/2016		6	42		20	25.8
6/22/2016		6	92		20	25
Quarterly Totals		42	663		-	-
Third Quarter 2016						
7/7/2016	BH01, BH02, BH03, BH07, Pipe	6	84	BH01, BH02, BH03, BH04, BH05, BH07	15	13
7/20/2016		6	135		17.5	15
8/21/2016		6	80		20	20
8/31/2016		6	42		20	33
9/28/2016		6	152		20	30
Quarterly Totals		30	493			-

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EFR / AS OPERATIONAL SUMMARY TABLE

Date	EFR Wells	Total EFR/AS Duration (hours)	Approximate Gallons Extracted	AS Wells	Air Injection Pressure (psi)	Average Air Flow Rate (cfm)
Fourth Quarter 2016						
10/13/2016	BH01, BH02, BH03, BH07, Pipe	6	276	BH01, BH02, BH03, BH04, BH05, BH07	20	25
10/26/2016	BH01, BH02, BH03	6	84	BH01, BH02, BH03, BH04, BH05	20	20
11/9/2016	BH01, BH02, BH03, BH07, Pipe	6	126	BH01, BH02, BH04, BH05, BH07	20	20
12/11/2016		6	100	BH01, BH02, BH03, BH04, BH05, BH07	20	25
Quarterly Totals		24	586		-	-
First Quarter 2017						
1/19/2017	BH01, BH02, BH03, BH07, Pipe	6	140	BH01, BH02, BH03, BH04, BH05, BH07	20	23
2/16/2017	BH02, BH03, BH05, Pipe	6	80	BH01, BH02, BH03, BH04, BH06	20	25
3/1/2017		6	2		20	10
3/14/2017		6	42		20	10
3/31/2017		6	70		20	25
Quarterly Totals		30	334		-	-
Second Quarter 2017						
4/11/2017	BH02, BH03, BH05, Pipe	6	42	BH01, BH02, BH03, BH04, BH06	20	15
4/26/2017		6	10		20	15
5/24/2017		6	15		20	15
6/7/2017		6	84		20	10
6/21/2017		5.5	84		20	15
Quarterly Totals		29.5	235		-	-

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

April 25, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Jerke Up 8-7

Enclosed are the results of analyses for samples received by Summit Scientific on 04/17/17 15:39. 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: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01R	1704164-01	Water	04/17/17 13:19	04/17/17 15:39
BH03	1704164-02	Water	04/17/17 13:26	04/17/17 15:39
BH04	1704164-03	Water	04/17/17 13:33	04/17/17 15:39
BH05	1704164-04	Water	04/17/17 13:41	04/17/17 15:39
BH06	1704164-05	Water	04/17/17 13:43	04/17/17 15:39
BH07	1704164-06	Water	04/17/17 13:52	04/17/17 15:39
BH08R	1704164-07	Water	04/17/17 13:55	04/17/17 15:39
BH09	1704164-08	Water	04/17/17 14:03	04/17/17 15:39

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: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

Case Narrative

Client: PDC Energy

Project: Jerke Up 8-7

Report Number 1704164

Per client request via email dated 4/25/17 from Tyler Blessing, the sample ID in this report has been changed in the following manner:

BH05 to BH06 as there was a duplicate BH05 listed on the COC, the second sample listed BH05 was changed to BH06, confirmed by the label on the sample and the time sampled.

A handwritten signature in black ink, appearing to be 'MSM'.



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

Project: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

Sample Receipt Checklist

S2 Work Order: 1704164
Client: PDC Client Project ID: Jerke UP 8-7
Shipped Via: hand delivered Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)

Cooler ID					
Temp (°C)	<u>5.1°C</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"/>			<u>on ice</u>
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.

Eric Havelle
Custodian Printed Name

E. Havelle
Signature or Initials of Custodian

4-17-17
Date/Time



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

Project: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

BH01R
1704164-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1704183	04/19/17	04/19/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/17/17 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.9 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.7 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

BH03
1704164-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1704183	04/19/17	04/19/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/17/17 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		85.7 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %	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: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

BH04
1704164-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1704183	04/19/17	04/19/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/17/17 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.4 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

BH05
1704164-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 13:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1704183	04/19/17	04/19/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	12	2.0	"	"	"	"	"	"	

Date Sampled: **04/17/17 13:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.6 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.2 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.7 %	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: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

BH06
1704164-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 13:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1704183	04/19/17	04/19/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/17/17 13:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.7 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.7 %	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: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

BH07
1704164-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 13:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1704183	04/19/17	04/19/17	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/17/17 13:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		86.9 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		96.4 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %		45-146		"	"	"	"	

Summit Scientific

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

Project: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

BH08R
1704164-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1704183	04/19/17	04/19/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/17/17 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		87.0 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

BH09
1704164-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/17 14:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1704183	04/19/17	04/19/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/17/17 14:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		89.2 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

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 1704183 - EPA 5030 Water MS

Blank (1704183-BLK1)

Prepared & Analyzed: 04/19/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	10.6		"	13.3	79.4	37-154				
Surrogate: Toluene-d8	12.7		"	13.3	95.6	45-149				
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3	95.6	45-146				

LCS (1704183-BS1)

Prepared & Analyzed: 04/19/17

Benzene	26.9	1.0	ug/l	33.3	80.6	51-132				
Toluene	32.0	1.0	"	33.3	96.1	51-138				
Ethylbenzene	36.2	1.0	"	33.1	110	58-146				
m,p-Xylene	77.3	2.0	"	66.5	116	57-144				
o-Xylene	35.2	1.0	"	32.7	108	53-146				
Surrogate: 1,2-Dichloroethane-d4	11.7		"	13.3	87.8	37-154				
Surrogate: Toluene-d8	12.7		"	13.3	95.0	45-149				
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3	96.5	45-146				

Matrix Spike (1704183-MS1)

Source: 1704149-01

Prepared & Analyzed: 04/19/17

Benzene	27.3	1.0	ug/l	33.3	ND	81.8	34-141			
Toluene	32.4	1.0	"	33.3	ND	97.1	27-151			
Ethylbenzene	36.6	1.0	"	33.1	ND	111	29-160			
m,p-Xylene	77.2	2.0	"	66.5	ND	116	20-166			
o-Xylene	35.9	1.0	"	32.7	ND	110	33-159			
Surrogate: 1,2-Dichloroethane-d4	11.8		"	13.3	88.7	37-154				
Surrogate: Toluene-d8	12.8		"	13.3	95.9	45-149				
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3	96.3	45-146				

Summit Scientific

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

Project: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

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 1704183 - EPA 5030 Water MS

Matrix Spike Dup (1704183-MSD1)		Source: 1704149-01			Prepared & Analyzed: 04/19/17					
Benzene	27.9	1.0	ug/l	33.3	ND	83.8	34-141	2.43	32	
Toluene	32.8	1.0	"	33.3	ND	98.4	27-151	1.35	25	
Ethylbenzene	37.3	1.0	"	33.1	ND	113	29-160	1.98	50	
m,p-Xylene	79.2	2.0	"	66.5	ND	119	20-166	2.61	36	
o-Xylene	36.3	1.0	"	32.7	ND	111	33-159	1.14	26	
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.3		96.8	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		96.5	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		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: Jerke Up 8-7
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/17 12:11

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

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.

A handwritten signature in black ink, appearing to be 'MSM'.

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: Jerke Up 8-7 Tank Battery

Enclosed are the results of analyses for samples received by Summit Scientific on 04/26/17 10:00. 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: Jerke Up 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 09:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH02R	1704257-01	Water	04/25/17 18:08	04/26/17 10:00

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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: Jerke Up 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 09:12

Sample Receipt Checklist

S2 Work Order: 1704257

Client: PDC/Tasman

Client Project ID: Jerke Up 8-7 Tank Battery

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>2.6</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?				
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>			<u>On ice</u>
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.				

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

4/26/17 1200
Date/Time



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

Project: Jerke Up 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 09:12

BH02R
1704257-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/25/17 18:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	82	1.0	ug/l	1	1704304	04/29/17	04/29/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	22	1.0	"	"	"	"	"	"	
Xylenes (total)	290	2.0	"	"	"	"	"	"	

Date Sampled: **04/25/17 18:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.3 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		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: Jerke Up 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 09:12

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 1704304 - EPA 5030 Water MS

Blank (1704304-BLK1)

Prepared & Analyzed: 04/29/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.5		"	13.3	101	37-154				
Surrogate: Toluene-d8	12.2		"	13.3	91.7	45-149				
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3	98.5	45-146				

LCS (1704304-BS1)

Prepared & Analyzed: 04/29/17

Benzene	36.1	1.0	ug/l	33.3	108	51-132				
Toluene	38.0	1.0	"	33.3	114	51-138				
Ethylbenzene	40.7	1.0	"	33.1	123	58-146				
m,p-Xylene	76.7	2.0	"	66.5	115	57-144				
o-Xylene	38.3	1.0	"	32.7	117	53-146				
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3	105	37-154				
Surrogate: Toluene-d8	12.8		"	13.3	96.2	45-149				
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3	96.4	45-146				

Matrix Spike (1704304-MS1)

Source: 1704241-01

Prepared & Analyzed: 04/29/17

Benzene	37.9	1.0	ug/l	33.3	ND	114	34-141			
Toluene	40.4	1.0	"	33.3	ND	121	27-151			
Ethylbenzene	41.7	1.0	"	33.1	ND	126	29-160			
m,p-Xylene	78.0	2.0	"	66.5	ND	117	20-166			
o-Xylene	39.2	1.0	"	32.7	ND	120	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3	110	37-154				
Surrogate: Toluene-d8	13.1		"	13.3	98.4	45-149				
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3	95.8	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: Jerke Up 8-7 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 09:12

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 1704304 - EPA 5030 Water MS

Matrix Spike Dup (1704304-MSD1)		Source: 1704241-01			Prepared & Analyzed: 04/29/17					
Benzene	37.8	1.0	ug/l	33.3	ND	113	34-141	0.238	32	
Toluene	39.8	1.0	"	33.3	ND	119	27-151	1.45	25	
Ethylbenzene	42.2	1.0	"	33.1	ND	127	29-160	1.03	50	
m,p-Xylene	79.0	2.0	"	66.5	ND	119	20-166	1.21	36	
o-Xylene	39.6	1.0	"	32.7	ND	121	33-159	1.09	26	
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		110	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		97.0	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.2	45-146			

Summit Scientific

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

Project: Jerke Up 8-7 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/03/17 09:12

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