PDC Energy, Inc.

First Quarter 2022 Groundwater Monitoring Summary

March 22, 2022

Former Anderson 12-13 Tank Battery
SENW Section 13 T6N R65W
Remediation # 17005

This groundwater monitoring summary has been prepared by Tasman, Inc. for the former Anderson 12-13 Tank Battery.

Site History and Background

On March 31, 2021, a historic hydrocarbon release was discovered beneath the former tank battery infrastructure. Following the discovery, mitigation activities were initiated and between March 31, and April 6, 2021, approximately 706 cubic yards of impacted material were removed from the former excavation. During excavation activities, groundwater was encountered within the excavation at approximately 6 feet below ground surface (bgs). On July 27, 2021, eight monitoring wells (BH01 – BH08) were installed within and adjacent to the former excavation extent to confirm the absence of dissolved phase hydrocarbon impacts.

Groundwater Monitoring Activities

On February 23, 2022, groundwater monitoring was conducted at all eight monitoring wells (BH01 – BH08). Eight groundwater samples were submitted to Summit Scientific Laboratories for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260B, chloride and sulfate anions by EPA Method 300.0, total dissolved solids (TDS) by Method SM 2540C, and dissolved selenium by EPA Method 200.8.

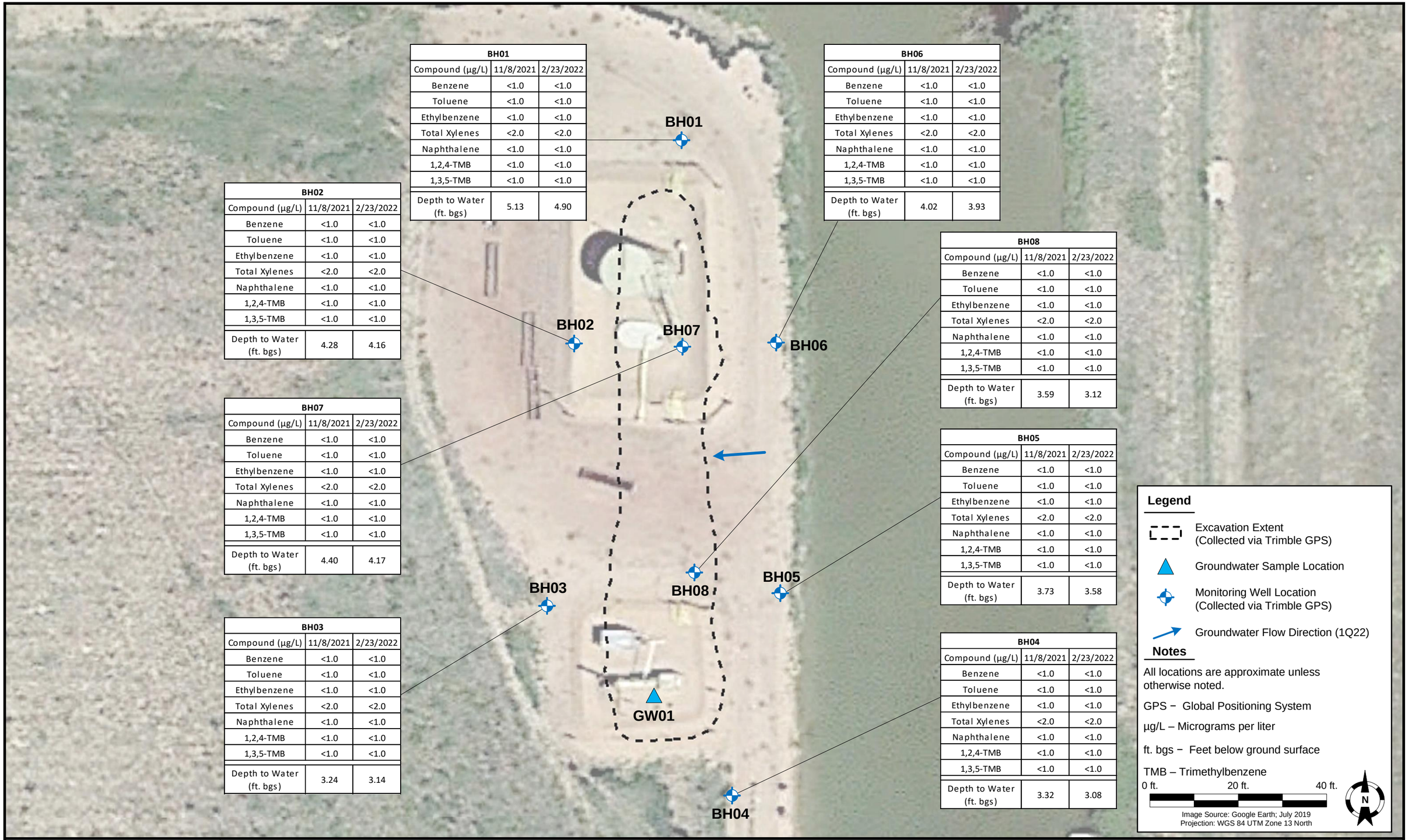
First quarter 2022 analytical results indicated that organic compound concentrations were below the applicable COGCC Table 915-1 groundwater standards in all eight monitoring well locations. Additionally, inorganic constituent concentrations were in compliance with the applicable regulatory standards or within 1.25x the background concentrations of the up- and cross-gradient monitoring wells (BH01, BH05, and BH06) in all sampled locations. Dissolved selenium concentrations were below the applicable Colorado Department of Health and Environment (CDPHE) domestic water supply standard in all monitoring well locations. Sample locations and corresponding analytical results are illustrated on Figures 1 and 2. Groundwater elevation data is

illustrated on Figure 3. Groundwater analytical results are summarized in Tables 1 and 2. The laboratory analytical report is included as Attachment A.

Current Remediation Activities and Path Forward

Monitored natural attenuation (MNA) was selected as the remediation strategy for this site during the third quarter 2021 and will remain the selected remediation strategy through the second quarter 2022.

Second quarter 2022 groundwater sampling will be conducted in May 2022.



BH01		
Compound (µg/L)	11/8/2021	2/23/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	5.13	4.90

BH02		
Compound (µg/L)	11/8/2021	2/23/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	4.28	4.16

BH07		
Compound (µg/L)	11/8/2021	2/23/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	4.40	4.17

BH03		
Compound (µg/L)	11/8/2021	2/23/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	3.24	3.14

BH06		
Compound (µg/L)	11/8/2021	2/23/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	4.02	3.93

BH08		
Compound (µg/L)	11/8/2021	2/23/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	3.59	3.12

BH05		
Compound (µg/L)	11/8/2021	2/23/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	3.73	3.58

BH04		
Compound (µg/L)	11/8/2021	2/23/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	3.32	3.08

Legend

- Excavation Extent (Collected via Trimble GPS)
- Groundwater Sample Location
- Monitoring Well Location (Collected via Trimble GPS)
- Groundwater Flow Direction (1Q22)

Notes

All locations are approximate unless otherwise noted.

GPS − Global Positioning System

µg/L – Micrograms per liter

ft. bgs − Feet below ground surface

TMB – Trimethylbenzene

0 ft. 20 ft. 40 ft.

N

Image Source: Google Earth; July 2019
Projection: WGS 84 UTM Zone 13 North

DATE:	March 22, 2022
DESIGNED BY:	C. Hamlin
DRAWN BY:	M. Connolly

TASMAN

Tasman, Inc.
6855 W. 119th Ave.
Broomfield, CO 80020

PDC Energy, Inc. – DJ Basin
Former Anderson 12-13 Tank Battery
SENW, Section 13 Township 6 North, Range 65 West
Weld County, Colorado

GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE 1

BH01		
Compound (mg/L)	11/8/2021	2/23/2022
Chloride	235	165
Sulfate	9,810	3,780
TDS	11,100	6,680
Selenium (µg/L)	19.0	<1.90
Depth to Water (ft. bgs)	5.13	4.90

BH02		
Compound (mg/L)	11/8/2021	2/23/2022
Chloride	86.4	45.0
Sulfate	**4,190**	**1,860**
TDS	6,160	2,980
Selenium (µg/L)	13.7	6.93
Depth to Water (ft. bgs)	4.28	4.16

BH08		
Compound (mg/L)	11/8/2021	2/23/2022
Chloride	80.2	58.6
Sulfate	**3,400**	**1,400**
TDS	3,730	2,000
Selenium (µg/L)	40.9	<1.90
Depth to Water (ft. bgs)	3.59	3.12

BH03		
Compound (mg/L)	11/8/2021	2/23/2022
Chloride	403	242
Sulfate	**7,330**	**2,630**
TDS	12,600	4,220
Selenium (µg/L)	43.8	12.3
Depth to Water (ft. bgs)	3.24	3.14

BH07		
Compound (mg/L)	11/8/2021	2/23/2022
Chloride	145	92.4
Sulfate	**3,750**	**2,030**
TDS	4,040	3,060
Selenium (µg/L)	1.97	6.38
Depth to Water (ft. bgs)	4.40	3.17

BH06		
Compound (mg/L)	11/8/2021	2/23/2022
Chloride	125	51.2
Sulfate	4,240	2,620
TDS	4,990	2,740
Selenium (µg/L)	8.14	<1.90
Depth to Water (ft. bgs)	4.02	3.93

BH05		
Compound (mg/L)	11/8/2021	2/23/2022
Chloride	95.2	57.2
Sulfate	**3,690**	2,900
TDS	3,980	3,070
Selenium (µg/L)	16.8	3.34
Depth to Water (ft. bgs)	3.73	3.58

BH04		
Compound (mg/L)	11/8/2021	2/23/2022
Chloride	111	28.8
Sulfate	**4,590**	**1,650**
TDS	4,810	2,530
Selenium (µg/L)	8.77	<1.90
Depth to Water (ft. bgs)	3.32	3.08

BH01
BH02
BH03
BH04
BH05
BH06
BH07
BH08
GW01

Legend

- Excavation Extent (Collected via Trimble GPS)
- Groundwater Sample Location
- Monitoring Well Location (Collected via Trimble GPS)
- Groundwater Flow Direction (1Q22)

Notes

All locations are approximate unless otherwise noted.

GPS − Global Positioning System

µg/L – Micrograms per liter

mg/L – Milligrams per liter

ft. bgs − Feet below ground surface

TDS – Total dissolved solids

Bold text – exceedances of COGCC Table 915-1 standards but within 1.25x BCKG concentration

COGCC – Colorado Oil and Gas Conservation Commission

BCKG – Background

0 ft. 20 ft. 40 ft.

N

Image Source: Google Earth; July 2019
Projection: WGS 84 UTM Zone 13 North

DATE:	March 22, 2022
DESIGNED BY:	C. Hamlin
DRAWN BY:	M. Connolly

TASMAN

Tasman, Inc.
6855 W. 119th Ave.
Broomfield, CO 80020

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Former Anderson 12-13 Tank Battery
SENW, Section 13 Township 6 North, Range 65 West
Weld County, Colorado

GROUNDWATER ANALYTICAL RESULTS MAP (INORGANIC PARAMETERS)

FIGURE 2

DATE:	March 3, 2022
DESIGNED BY:	C. Hamlin
DRAWN BY:	L. Reed

TASMAN

Tasman, Inc.
6855 W. 119th Ave.
Broomfield, CO 80020

PDC Energy, Inc. – DJ Basin
Former Anderson 12-13 Tank Battery
SENW, Section 13 Township 6 North, Range 65 West
Weld County, Colorado

GROUNDWATER ELEVATION CONTOUR MAP (2/23/2022)

FIGURE 3

TABLE 1
FORMER ANDERSON 12-13 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water [2] (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (µg/L) [1]		**5**	**560**	**700**	**1,400**	**140**	**67**	**67**	**-**	**-**
BH01	8/23/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.52	4685.58
BH01	11/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.13	4684.97
BH01	2/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.90	4685.20
BH02	8/23/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.20	4685.93
BH02	11/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.28	4684.85
BH02	2/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.16	4684.97
BH03	11/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.28	4685.81
BH03	11/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.24	4684.85
BH03	2/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.14	4684.95
BH04	8/23/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.75	4685.62
BH04	11/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.32	4685.05
BH04	2/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.08	4685.29
BH05	8/23/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.41	4685.50
BH05	11/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.73	4685.18
BH05	2/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.58	4685.33
BH06	8/23/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.86	4685.45
BH06	11/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.02	4685.29
BH06	2/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.93	4685.38
BH07	8/23/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.38	4686.00
BH07	11/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.40	4684.98
BH07	2/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.17	4685.21
BH08	8/23/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.36	4685.94
BH08	11/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.59	4684.71
BH08	2/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.12	4685.18

Notes:
1. Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.
2. Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.
TMB = Trimethylbenzene
COGCC = Colorado Oil and Gas Conservation Commission
µg/L = Micrograms per liter
(<) = Analytical result is less than the indicated laboratory reporting limit.
ft. = Feet
AMSL = Above Mean Sea Level

TABLE 2
FORMER ANDERSON 12-13 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC PARAMETERS

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)	Selenium [2] (µg/L)	Depth to Water [3] (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (mg/L) [1]		**<1.25 x BCKG**	**250 or <1.25 x BCKG**	**250 or <1.25 x BCKG**	**50**	**-**	**-**
BH01	8/23/2021	8,970	205	**8,210**	NA	4.52	4685.58
BH01	8/23/2021	11,100	235	9,810	19.0	5.13	4684.97
BH01	2/23/2022	6,680	165 (M)	3,780 (M)	<1.90	4.90	4685.20
BH02	11/8/2021	6,160	86.4	**4,190**	13.7	4.28	4684.85
BH02	2/23/2022	2,980	45.0	**1,860**	6.93	4.16	4684.97
BH03	11/8/2021	12,600	403	**7,330**	43.8	3.24	4684.85
BH03	2/23/2022	4,220	242	**2,630**	12.3	3.14	4684.95
BH04	8/23/2021	3,980	105	**3,700**	NA	2.75	4685.62
BH04	11/8/2021	4,810	111	**4,590**	8.77	3.32	4685.05
BH04	2/23/2022	2,530	28.8	**1,650**	<1.90	3.08	4685.29
BH05	11/8/2021	3,980	95.2	**3,690**	16.8	3.73	4685.18
BH05	2/23/2022	3,070	57.2	2,900	3.34	3.58	4685.33
BH06	11/8/2021	4,990	125	4,240	8.14	4.02	4685.29
BH06	2/23/2022	2,740	51.2	2,620	<1.90	3.93	4685.38
BH07	8/23/2021	2,980	138	**2,720**	NA	3.38	4686.00
BH07	11/8/2021	4,040	145	**3,750**	1.97	4.40	4684.98
BH07	2/23/2022	3,060	92.4	**2,030**	6.38	4.17	4685.21
BH08	11/8/2021	3,730	80.2	**3,400**	40.9	3.59	4684.71
BH08	2/23/2022	2,000	58.6	**1,400**	<1.90	3.12	4685.18

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.
2. Selenium groundwater standard referenced from the 5 CCR 1002-41, Regulation No. 41, Table 1, Domestic Water Suppy - Human Health Standards, January 31, 2013.
3. Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

M = Possible matrix interference
TDS = Total dissolved solids
COGCC = Colorado Oil and Gas Conservation Commission
BCKG = Background
mg/L = Milligrams per liter
µg/L = Micrograms per liter
(<) = Analytical result is less than the indicated laboratory reporting limit.
= Up- / cross-gradient well location used for background concentration.
BOLD = Analytical result is in exceedance of applicable standard.
BOLD = Analytical result is in exceedance of applicable standard but within 1.25x background concentration.
ft. = Feet
AMSL = Above Mean Sea Level
NA = Constituent not analyzed

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

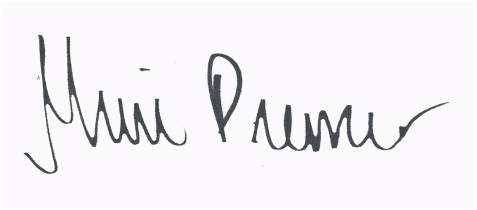
March 21, 2022

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

RE: Anderson 12-13 Tank Battery
Work Order #2202306

Enclosed are the results of analyses for samples received by Summit Scientific on 02/23/22 16:54. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2202306-01	Water	02/23/22 12:21	02/23/22 16:54
BH02	2202306-02	Water	02/23/22 12:42	02/23/22 16:54
BH03	2202306-03	Water	02/23/22 12:57	02/23/22 16:54
BH04	2202306-04	Water	02/23/22 13:10	02/23/22 16:54
BH05	2202306-05	Water	02/23/22 13:24	02/23/22 16:54
BH06	2202306-06	Water	02/23/22 13:37	02/23/22 16:54
BH07	2202306-07	Water	02/23/22 13:54	02/23/22 16:54
BH08	2202306-08	Water	02/23/22 14:04	02/23/22 16:54

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.

2202306

Summit Scientific

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

Client:	Tasman/ PDC	Project Manager:	Mark Longhurst
Address:	6855 W 119th St	E-Mail:	mark.longhurst@pdce.com
City/State/Zip:	Broomfield, CO 80020	Project Name:	Anderson 12-13 Tank Battery
Phone:	303-487-1228 Fax:	Project Number:	
Sampler Name:	Aaron Otillar		

				Preservative				Matrix				Analyze For:								
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO_3	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX	Napthalene	1,3,5, TMB	1,2,4 TMB	Cl	SO4	TDS	Dissolved Selenium	Special Instructions
BH01	2/23/22	1221	5	3		2		X				X	X	X	X	X	X	X	X	
BH02		1242																		
BH03		1257																		
BH04		1310																		
BH05		1324																		
BH06		1337																		
BH07		1354																		
BH08		1404																		

Relinquished by: Aaron Otillar	Date/Time: 2/23/22 1654	Received by: TASMAN LOCKBOX	Date/Time: 2/23/22 1654	**Turn Around Time (Check)**	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time: 22322 1654	Same Day ☐ 72 Hours ☐ 24 Hours ☐ Standard ☒ 48 Hours ☐	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	**Sample Integrity:** Temperature Upon Receipt: 0.3 Intact: Yes ✓ No ☐	

S2

S2 Work Order# 2202306

Sample Receipt Checklist

Client: PDC Tasman Client Project ID: Anderson 12-13 Tank Battery

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

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

Temp (°C)	4.8

Thermometer ID: G86A9201901378

	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 if there is evidence that cooling has begun.	-			on ice
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, etc.	-			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.**

[redacted] 2 23 22

Custodian Printed Name or Initials **Date/Time**

S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

BH01

2202306-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/23/22 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BFB0298	02/24/22	02/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/22 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*21-167*		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/23/22 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**165**	12.0	mg/L	200	BFC0009	03/01/22	03/01/22	EPA 300.0	
Sulfate	**3780**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/23/22 12:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**6680**	10.0	mg/L	1	BFB0288	02/24/22	02/24/22	SM2540C	

Summit Scientific

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S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

BH02

2202306-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/23/22 12:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BFB0298	02/24/22	02/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/22 12:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*21-167*		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/23/22 12:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**45.0**	12.0	mg/L	200	BFC0009	03/01/22	03/01/22	EPA 300.0	
Sulfate	**1860**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/23/22 12:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**2980**	10.0	mg/L	1	BFB0288	02/24/22	02/24/22	SM2540C	

Summit Scientific

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S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

BH03

2202306-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/23/22 12:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BFB0298	02/24/22	02/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/22 12:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*108 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*21-167*		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/23/22 12:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**242**	12.0	mg/L	200	BFC0009	03/01/22	03/01/22	EPA 300.0	
Sulfate	**2630**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/23/22 12:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**4220**	10.0	mg/L	1	BFB0288	02/24/22	02/24/22	SM2540C	

Summit Scientific

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S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

BH04

2202306-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/23/22 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BFB0298	02/24/22	02/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/22 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*21-167*		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/23/22 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**28.8**	12.0	mg/L	200	BFC0009	03/01/22	03/01/22	EPA 300.0	
Sulfate	**1650**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/23/22 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**2530**	10.0	mg/L	1	BFB0288	02/24/22	02/24/22	SM2540C	

Summit Scientific

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S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

BH05

2202306-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/23/22 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BFB0298	02/24/22	02/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/22 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*99.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*21-167*		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/23/22 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**57.2**	12.0	mg/L	200	BFC0009	03/01/22	03/01/22	EPA 300.0	
Sulfate	**2900**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/23/22 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**3070**	10.0	mg/L	1	BFB0288	02/24/22	02/24/22	SM2540C	

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S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

BH06

2202306-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/23/22 13:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BFB0298	02/24/22	02/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/22 13:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*108 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*21-167*		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/23/22 13:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**51.2**	12.0	mg/L	200	BFC0009	03/01/22	03/01/22	EPA 300.0	
Sulfate	**2620**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/23/22 13:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**2740**	10.0	mg/L	1	BFB0288	02/24/22	02/24/22	SM2540C	

Summit Scientific

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S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

BH07

2202306-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/23/22 13:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BFB0298	02/24/22	02/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/22 13:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*21-167*		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/23/22 13:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**92.4**	12.0	mg/L	200	BFC0009	03/01/22	03/01/22	EPA 300.0	
Sulfate	**2030**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/23/22 13:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**3060**	10.0	mg/L	1	BFB0288	02/24/22	02/24/22	SM2540C	

Summit Scientific

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S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

BH08

2202306-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/23/22 14:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BFB0298	02/24/22	02/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/22 14:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*21-167*		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/23/22 14:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**58.6**	12.0	mg/L	200	BFC0009	03/01/22	03/01/22	EPA 300.0	
Sulfate	**1400**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/23/22 14:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**2000**	10.0	mg/L	1	BFB0288	02/24/22	02/24/22	SM2540C	

Summit Scientific

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S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

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 BFB0298 - EPA 5030 Water MS										
Blank (BFB0298-BLK1)				Prepared: 02/24/22 Analyzed: 02/25/22						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	*12.5*		*"*	*13.3*		*93.7*	*23-173*			
Surrogate: Toluene-d8	*13.2*		*"*	*13.3*		*98.9*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.0*		*"*	*13.3*		*97.7*	*21-167*			
LCS (BFB0298-BS1)				Prepared: 02/24/22 Analyzed: 02/25/22						
Benzene	54.1	1.0	ug/l	50.0		108	51-132			
Toluene	54.5	1.0	"	50.0		109	51-138			
Ethylbenzene	54.0	1.0	"	50.0		108	58-146			
m,p-Xylene	107	2.0	"	100		107	57-144			
o-Xylene	52.1	1.0	"	50.0		104	53-146			
Naphthalene	41.9	1.0	"	50.0		83.7	70-130			
1,2,4-Trimethylbenzene	52.3	1.0	"	50.0		105	70-130			
1,3,5-Trimethylbenzene	53.3	1.0	"	50.0		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	*13.0*		*"*	*13.3*		*97.7*	*23-173*			
Surrogate: Toluene-d8	*13.3*		*"*	*13.3*		*99.5*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.4*		*"*	*13.3*		*100*	*21-167*			
Matrix Spike (BFB0298-MS1)	**Source: 2202144-01**			Prepared: 02/24/22 Analyzed: 02/25/22						
Benzene	50.9	1.0	ug/l	50.0	ND	102	34-141			
Toluene	51.4	1.0	"	50.0	ND	103	27-151			
Ethylbenzene	52.8	1.0	"	50.0	ND	106	29-160			
m,p-Xylene	105	2.0	"	100	ND	105	20-166			
o-Xylene	51.3	1.0	"	50.0	ND	103	33-159			
Naphthalene	43.8	1.0	"	50.0	ND	87.7	70-130			
1,2,4-Trimethylbenzene	51.6	1.0	"	50.0	ND	103	70-130			
1,3,5-Trimethylbenzene	52.7	1.0	"	50.0	ND	105	70-130			
Surrogate: 1,2-Dichloroethane-d4	*12.1*		*"*	*13.3*		*90.5*	*23-173*			
Surrogate: Toluene-d8	*13.1*		*"*	*13.3*		*98.2*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.2*		*"*	*13.3*		*99.4*	*21-167*			

Summit Scientific

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S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

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 BFB0298 - EPA 5030 Water MS										
Matrix Spike Dup (BFB0298-MSD1)	**Source: 2202144-01**			Prepared: 02/24/22 Analyzed: 02/25/22						
Benzene	52.0	1.0	ug/l	50.0	ND	104	34-141	2.12	30	
Toluene	52.8	1.0	"	50.0	ND	106	27-151	2.61	30	
Ethylbenzene	53.0	1.0	"	50.0	ND	106	29-160	0.321	30	
m,p-Xylene	106	2.0	"	100	ND	106	20-166	1.27	30	
o-Xylene	51.4	1.0	"	50.0	ND	103	33-159	0.234	30	
Naphthalene	45.5	1.0	"	50.0	ND	90.9	70-130	3.67	30	
1,2,4-Trimethylbenzene	52.6	1.0	"	50.0	ND	105	70-130	2.01	30	
1,3,5-Trimethylbenzene	53.6	1.0	"	50.0	ND	107	70-130	1.71	30	
Surrogate: 1,2-Dichloroethane-d4	*12.1*		*"*	*13.3*		*90.8*	*23-173*			
Surrogate: Toluene-d8	*13.4*		*"*	*13.3*		*101*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.0*		*"*	*13.3*		*97.4*	*21-167*			

Summit Scientific

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

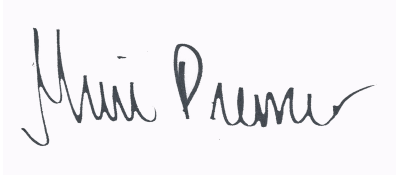
S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0009 - General Preparation										
Blank (BFC0009-BLK1)				Prepared & Analyzed: 03/01/22						
Chloride	ND	0.0600	mg/L							
Sulfate	ND	0.300	"							
LCS (BFC0009-BS1)				Prepared & Analyzed: 03/01/22						
Chloride	2.98	0.0600	mg/L	3.00		99.4	90-110			
Sulfate	14.7	0.300	"	15.0		98.2	90-110			
Duplicate (BFC0009-DUP1)	**Source: 2202306-01**			Prepared & Analyzed: 03/01/22						
Chloride	131	12.0	mg/L		165			22.7	20	QR-03
Sulfate	4280	60.0	"		3780			12.4	20	
Matrix Spike (BFC0009-MS1)	**Source: 2202306-01**			Prepared & Analyzed: 03/01/22						
Chloride	730	12.0	mg/L	600	165	94.3	80-120			
Sulfate	7640	60.0	"	3000	3780	129	80-120			QR-03



S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

Total Dissolved Solids by SM2540C - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0288 - General Preparation										
Blank (BFB0288-BLK1)				Prepared & Analyzed: 02/24/22						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (BFB0288-DUP1)		**Source: 2202297-01**		Prepared & Analyzed: 02/24/22						
Total Dissolved Solids	12900	10.0	mg/L		12800			0.467	20	

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Summit Scientific
Paul Shrewsbury
4653 Table Mountain Dr
Golden, CO 80403

RE: 2202306
Work Order Number: 2203061

March 17, 2022

Attention Paul Shrewsbury:

Fremont Analytical, Inc. received 8 sample(s) on 2/28/2022 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Muri Premer

Date: *03/17/2022*

CLIENT: Summit Scientific
Project: 2202306
Work Order: 2203061

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2203061-001	BH01	02/23/2022 12:21 PM	02/28/2022 9:09 AM
2203061-002	BH02	02/23/2022 12:42 PM	02/28/2022 9:09 AM
2203061-003	BH03	02/23/2022 12:57 PM	02/28/2022 9:09 AM
2203061-004	BH04	02/23/2022 1:10 PM	02/28/2022 9:09 AM
2203061-005	BH05	02/23/2022 1:24 PM	02/28/2022 9:09 AM
2203061-006	BH06	02/23/2022 1:37 PM	02/28/2022 9:09 AM
2203061-007	BH07	02/23/2022 1:54 PM	02/28/2022 9:09 AM
2203061-008	BH08	02/23/2022 2:04 PM	02/28/2022 9:09 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2203061**
Date: **3/17/2022**

CLIENT: Summit Scientific
Project: 2202306

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Summit Scientific
Project: 2202306

Lab ID: 2203061-001 **Collection Date:** 2/23/2022 12:21:00 PM
Client Sample ID: **BH01** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 35560		Analyst: EH
Selenium	ND	1.90		µg/L	1	3/17/2022 11:18:09 AM

Lab ID: 2203061-002 **Collection Date:** 2/23/2022 12:42:00 PM
Client Sample ID: **BH02** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 35560		Analyst: EH
Selenium	6.93	1.90		µg/L	1	3/17/2022 11:29:39 AM

Lab ID: 2203061-003 **Collection Date:** 2/23/2022 12:57:00 PM
Client Sample ID: **BH03** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 35560		Analyst: EH
Selenium	12.3	1.90		µg/L	1	3/17/2022 11:31:51 AM

Lab ID: 2203061-004 **Collection Date:** 2/23/2022 1:10:00 PM
Client Sample ID: **BH04** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 35560		Analyst: EH
Selenium	ND	1.90		µg/L	1	3/9/2022 6:43:55 PM

CLIENT: Summit Scientific
Project: 2202306

Lab ID: 2203061-005 **Collection Date:** 2/23/2022 1:24:00 PM
Client Sample ID: **BH05** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 35560		Analyst: EH
Selenium	3.34	1.90		µg/L	1	3/17/2022 11:34:02 AM

Lab ID: 2203061-006 **Collection Date:** 2/23/2022 1:37:00 PM
Client Sample ID: **BH06** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 35560		Analyst: EH
Selenium	ND	1.90		µg/L	1	3/9/2022 6:49:23 PM

Lab ID: 2203061-007 **Collection Date:** 2/23/2022 1:54:00 PM
Client Sample ID: **BH07** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 35560		Analyst: EH
Selenium	6.38	1.90		µg/L	1	3/17/2022 11:36:14 AM

Lab ID: 2203061-008 **Collection Date:** 2/23/2022 2:04:00 PM
Client Sample ID: **BH08** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 35560		Analyst: EH
Selenium	ND	1.90		µg/L	1	3/9/2022 6:54:50 PM

Work Order: 2203061
CLIENT: Summit Scientific
Project: 2202306

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-35560FB**	SampType: **MBLK**	Units: **µg/L**	Prep Date: **3/2/2022**	RunNo: **73876**
Client ID: **MBLKW**	Batch ID: **35560**		Analysis Date: **3/17/2022**	SeqNo: **1518157**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	1.90									

Sample ID: **MB-35560**	SampType: **MBLK**	Units: **µg/L**	Prep Date: **3/2/2022**	RunNo: **73876**
Client ID: **MBLKW**	Batch ID: **35560**		Analysis Date: **3/17/2022**	SeqNo: **1518158**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	1.90									

Sample ID: **LCS-35560**	SampType: **LCS**	Units: **µg/L**	Prep Date: **3/2/2022**	RunNo: **73876**
Client ID: **LCSW**	Batch ID: **35560**		Analysis Date: **3/17/2022**	SeqNo: **1518159**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	50.6	1.90	50.00	0	101	85	115				

Sample ID: **2202524-001BDUP**	SampType: **DUP**	Units: **µg/L**	Prep Date: **3/2/2022**	RunNo: **73876**
Client ID: **BATCH**	Batch ID: **35560**		Analysis Date: **3/17/2022**	SeqNo: **1518161**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	4.14	1.90						4.350	4.97	30	

Sample ID: **2202524-001BMS**	SampType: **MS**	Units: **µg/L**	Prep Date: **3/2/2022**	RunNo: **73876**
Client ID: **BATCH**	Batch ID: **35560**		Analysis Date: **3/17/2022**	SeqNo: **1518162**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	56.4	1.90	50.00	4.350	104	70	130				

Sample Log-In Check List

Client Name:	**SUMSCI**	Work Order Number:	**2203061**
Logged by:	**Clare Griggs**	Date Received:	**2/28/2022 9:09:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
		Unknown prior to receipt.		
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample	10.5

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 2/25/22 | Page: 1 of: 1 | Laboratory Project No (internal): 2203061

Project Name: 2202306

Special Remarks:

Client: Summit Scientific

Project No:

Address: 4653 Table Mountain Drive

Collected by:

City, State, Zip: Golden, CO. 80403

Location:

Telephone: 303-277-9310

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Dissolved - Se	Comments
1	BH01	2/23/22	12:21	W	X	
2	BH02		12:42		X	
3	BH03		12:57		X	
4	BH04		13:10		X	
5	BH05		13:24		X	
6	BH06		13:37		X	
7	BH07		13:54		X	
8	BH08	↓	14:04	↓	X	
9						
10						

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x Sheree Bahr	2/25/22 12:00	x [illegible]	2/28/22 9:09
Relinquished	Date/Time	Received	Date/Time
x		x	

Turn-around Time:
- ■ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day ☐ (specify)

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Anderson 12-13 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 03/21/22 15:27

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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