

PDC Energy, Inc.
Third Quarter 2021 Groundwater Monitoring Summary

August 30, 2021

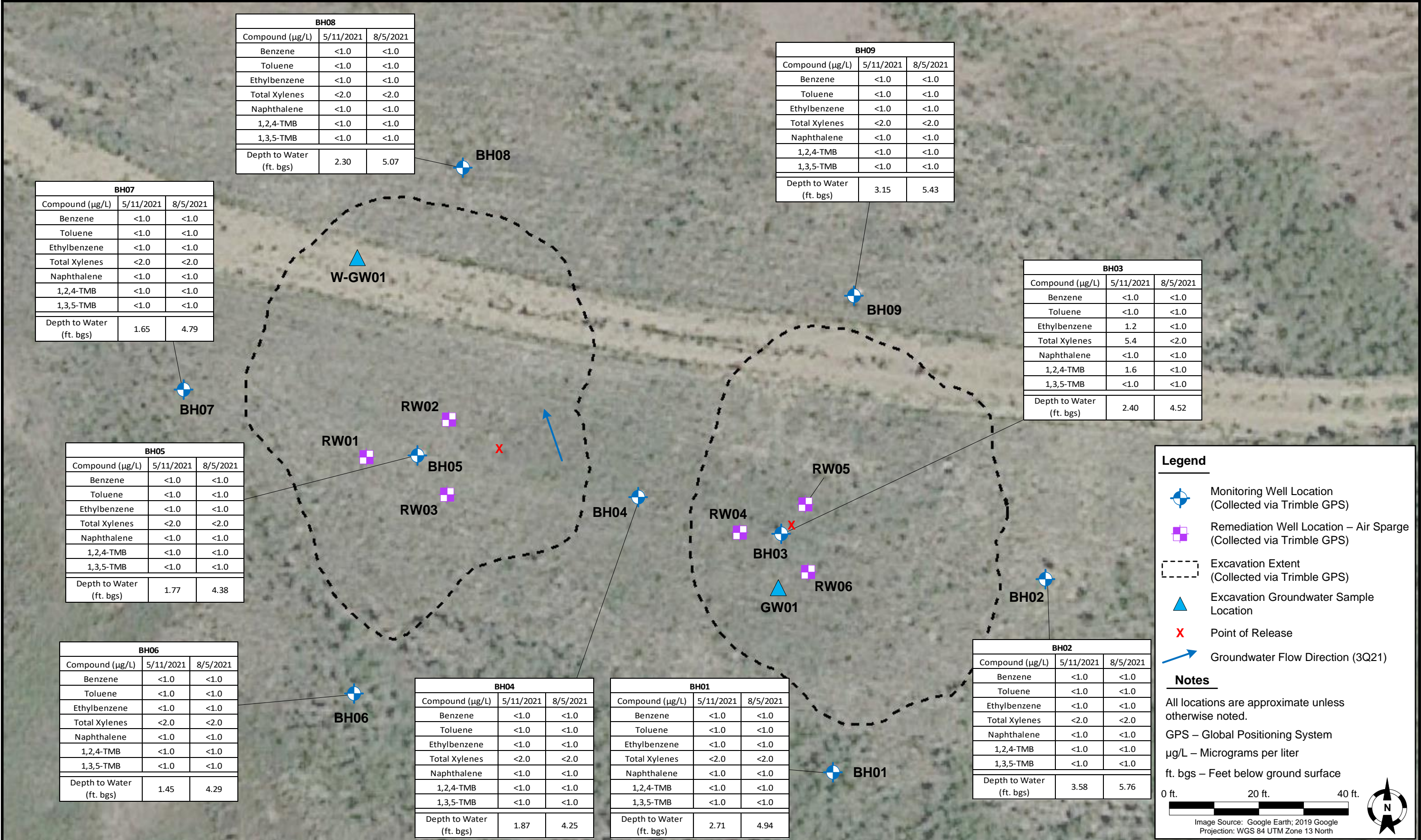
Former Mark 11, 12, 14-35 Tank Battery
NWSW Section 35 T4N R65W
Remediation # 12170

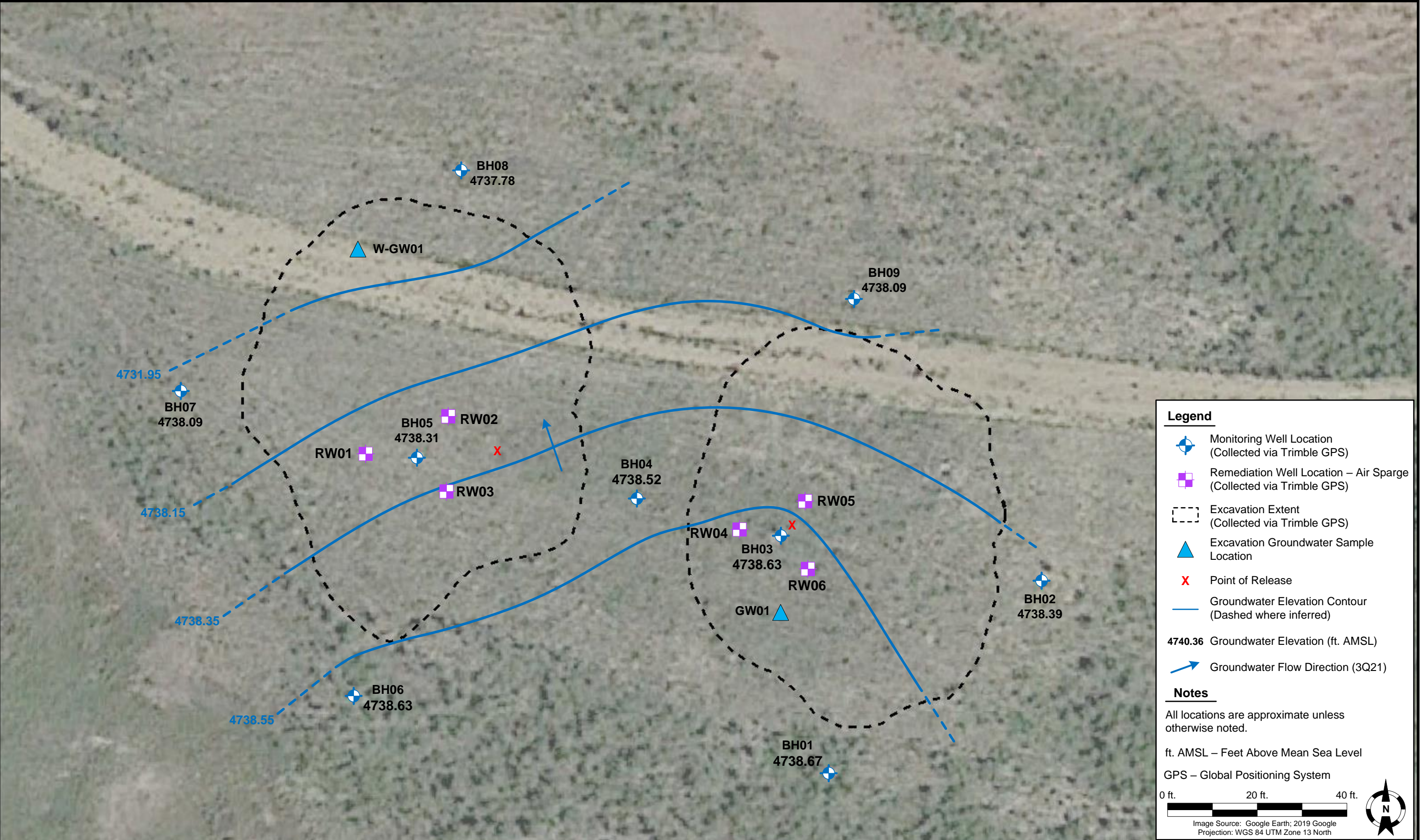
This groundwater monitoring summary has been prepared by Tasman Geosciences, Inc. for the former Mark 11, 12, 14-35 tank battery. On August 5, 2021, groundwater monitoring was conducted at all nine monitoring well locations (BH01 – BH09). Nine groundwater samples were submitted to Summit Scientific Laboratory for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260B.

Third quarter 2021 analytical results indicated that organic compound concentrations were below the applicable COGCC Table 915-1 groundwater standards in all nine monitoring well locations. Groundwater analytical results are summarized in Table 1. Sample locations and corresponding analytical results are illustrated on Figure 1. Groundwater elevation data is illustrated on Figure 2. The laboratory analytical report is included in Attachment A.

Monitored natural attenuation (MNA) was selected as the remediation strategy for this site during the first quarter 2019 and continued through fourth quarter 2019. Due to persisting benzene concentrations, one air sparge (AS) and enhanced fluid recovery (EFR) event was conducted in November 2019. On February 20, 2020, six remediation wells (RW01 – RW06) were installed within the former source area to assist in remedial efforts and address remaining dissolved-phase hydrocarbon impacts. Based on the data collected during the event, EFR/AS was selected as the remediation strategy for this location between April 2020 and second quarter 2021. MNA was selected as the remediation strategy for this site during the third quarter 2021 and will remain the selected remediation strategy through the fourth quarter 2021.

Fourth quarter 2021 groundwater sampling will be conducted during November 2021.





DATE: August 8, 2021

DESIGNED BY: C. Hamlin

DRAWN BY: C. Ambler



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

PDC Energy, Inc. – DJ Basin
Former Mark 11, 12, 14-35 Tank Battery
NWSW, Section 35, Township 4 North, Range 65 West
Weld County, Colorado

**GROUNDWATER
ELEVATION CONTOUR
MAP (08/05/2021)**

**FIGURE
2**

TABLE 1
FORMER MARK 11, 12, 14-35 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS

| 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 | 2/9/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3.45 | 4740.16 |
| BH01 | 5/11/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 2.71 | 4740.90 |
| BH01 | 8/5/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 4.94 | 4738.67 |
| BH02 | 2/9/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 4.29 | 4739.86 |
| BH02 | 5/11/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3.58 | 4740.57 |
| BH02 | 8/5/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 5.76 | 4738.39 |
| BH03 | 2/9/2021 | <1.0 | <1.0 | 1.6 | 6.9 | <1.0 | 2.9 | <1.0 | 3.14 | 4740.01 |
| BH03 | 5/11/2021 | <1.0 | <1.0 | 1.2 | 5.4 | <1.0 | 1.6 | <1.0 | 2.40 | 4740.75 |
| BH03 | 8/5/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 4.52 | 4738.63 |
| BH04 | 2/9/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 2.71 | 4740.06 |
| BH04 | 5/11/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 1.87 | 4740.90 |
| BH04 | 8/5/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 4.25 | 4738.52 |
| BH05 | 2/9/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 2.78 | 4739.91 |
| BH05 | 5/11/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 1.77 | 4740.92 |
| BH05 | 8/5/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 4.38 | 4738.31 |
| BH06 | 2/9/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 2.64 | 4740.28 |
| BH06 | 5/11/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 1.45 | 4741.47 |
| BH06 | 8/5/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 4.29 | 4738.63 |
| BH07 | 2/9/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3.00 | 4739.77 |
| BH07 | 5/11/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 1.65 | 4741.12 |
| BH07 | 8/5/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 4.79 | 4737.98 |
| BH08 | 2/9/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3.32 | 4739.53 |
| BH08 | 5/11/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 2.30 | 4740.55 |
| BH08 | 8/5/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 5.07 | 4737.78 |
| BH09 | 2/9/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3.83 | 4739.69 |
| BH09 | 5/11/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 3.15 | 4740.37 |
| BH09 | 8/5/2021 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 | 5.43 | 4738.09 |

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

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 17, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Mark 11,12,14-35

Work Order #2108078

Enclosed are the results of analyses for samples received by Summit Scientific on 08/05/21 17:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



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

Project: Mark 11,12,14-35

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|----------------|----------------|
| BH01 | 2108078-01 | Water | 08/05/21 12:12 | 08/05/21 17:50 |
| BH02 | 2108078-02 | Water | 08/05/21 12:02 | 08/05/21 17:50 |
| BH03 | 2108078-03 | Water | 08/05/21 12:26 | 08/05/21 17:50 |
| BH04 | 2108078-04 | Water | 08/05/21 12:20 | 08/05/21 17:50 |
| BH05 | 2108078-05 | Water | 08/05/21 12:16 | 08/05/21 17:50 |
| BH06 | 2108078-06 | Water | 08/05/21 12:06 | 08/05/21 17:50 |
| BH07 | 2108078-07 | Water | 08/05/21 11:58 | 08/05/21 17:50 |
| BH08 | 2108078-08 | Water | 08/05/21 11:49 | 08/05/21 17:50 |
| BH09 | 2108078-09 | Water | 08/05/21 11:51 | 08/05/21 17:50 |

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.

2108078

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: PDC / Tasman

Project Manager: mark Longhurst

Address: 6855 W. 119th Ave

E-Mail: mark.longhurst@pdce.com

City/State/Zip: Broomfield / CO/ 80020

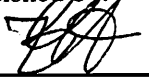


Phone: 303-487-1228

Project Name: Marks 11, 12, 14-35

Sampler Name: Ben Wagner

Project Number: N/A

| | | | | | Preservative | | | | Matrix | | | | Analysis Requested | | | | Special Instructions | |
|----|--------------------|--------------|--------------|-----------------|--------------|------------------|------|-------|--------|------|----------------|-------|--------------------|-------------|-----------|-----------|----------------------|--|
| ID | Sample Description | Date Sampled | Time Sampled | # of containers | HCl | HNO ₃ | None | Other | Water | Soil | Air-Canister # | Other | BTEX | Naphthalene | 1,2,4 TMB | 1,3,5 TMB | | |
| 1 | BH01 | 8/5/21 | 1212 | 3 | | | | | X | | | | X | X | X | X | | |
| 2 | BH02 | | 1202 | 1 | | | | | | | | | | | | | | |
| 3 | BH03 | | 1226 | 1 | | | | | | | | | | | | | | |
| 4 | BH04 | | 1220 | 1 | | | | | | | | | | | | | | |
| 5 | BH05 | | 1216 | 1 | | | | | | | | | | | | | | |
| 6 | BH06 | | 1206 | 1 | | | | | | | | | | | | | | |
| 7 | BH07 | | 1158 | 1 | | | | | | | | | | | | | | |
| 8 | BH08 | | 1149 | 1 | | | | | | | | | | | | | | |
| 9 | BH09 | | 1151 | 1 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | |

| | | | | | |
|--|------------------------|--|------------------------|--|--------|
| Relinquished by:  | Date/Time: 8/5/21 1500 | Received by: Tasman Lock  | Date/Time: 8/5/21 1500 | Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: 10.2 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No | Notes: |
| Relinquished by: Tasman Lockbox | Date/Time: 8/5/21 1750 | Received by: Will Salin  | Date/Time: 8/5/21 1750 | | |
| Relinquished by: | Date/Time: | Received by: | Date/Time: | | |

Sample Receipt Checklist

S2 Work Order 2108078

Client: PDC/TASMAN Client Project ID: Mark 11, 12, 14-35

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

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

Temp (°C) 10.2

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

NG
Custodian Printed Name or Initials

Will Palin
Signature of Custodian

8/5/21
Date/Time



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

Project: Mark 11,12,14-35
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

BH01
2108078-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/21 12:12**

| Analyte | Result | Reporting | | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | Units | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BEH0130 | 08/09/21 | 08/10/21 | 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: **08/05/21 12:12**

| Analyte | Result | Reporting | | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | Units | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 74.7 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.7 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 87.7 % | 21-167 | | " | " | " | " | |

Summit Scientific

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

Project: Mark 11,12,14-35
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

BH02
2108078-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/21 12:02**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BEH0130 | 08/09/21 | 08/10/21 | 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: **08/05/21 12:02**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 80.2 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 99.6 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 89.4 % | 21-167 | | " | " | " | " | |

Summit Scientific

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

Project: Mark 11,12,14-35
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

BH03
2108078-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/21 12:26**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BEH0130 | 08/09/21 | 08/10/21 | 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: **08/05/21 12:26**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 80.6 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 102 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 89.5 % | 21-167 | | " | " | " | " | |

Summit Scientific

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

Project: Mark 11,12,14-35
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

BH04
2108078-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/21 12:20**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BEH0130 | 08/09/21 | 08/10/21 | 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: **08/05/21 12:20**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 80.9 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 102 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 88.9 % | 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.



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

Project: Mark 11,12,14-35
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

BH05
2108078-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/21 12:16**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BEH0130 | 08/09/21 | 08/10/21 | 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: **08/05/21 12:16**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 79.7 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 98.3 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 92.1 % | 21-167 | | " | " | " | " | |

Summit Scientific

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

Project: Mark 11,12,14-35

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

BH06
2108078-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/21 12:06**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BEH0130 | 08/09/21 | 08/10/21 | 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: **08/05/21 12:06**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 78.2 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.4 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 86.2 % | 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.



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

Project: Mark 11,12,14-35
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

BH07
2108078-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/21 11:58**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BEH0130 | 08/09/21 | 08/10/21 | 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: **08/05/21 11:58**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 81.7 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.7 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 88.1 % | 21-167 | | " | " | " | " | |

Summit Scientific

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

Project: Mark 11,12,14-35

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

BH08
2108078-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/21 11:49**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BEH0130 | 08/09/21 | 08/10/21 | 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: **08/05/21 11:49**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 80.9 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.4 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 87.2 % | 21-167 | | " | " | " | " | |

Summit Scientific

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

Project: Mark 11,12,14-35

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

BH09
2108078-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/05/21 11:51**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | BEH0130 | 08/09/21 | 08/10/21 | 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: **08/05/21 11:51**

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 79.9 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.3 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 89.9 % | 21-167 | | " | " | " | " | |

Summit Scientific

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

Project: Mark 11,12,14-35

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

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 BEH0130 - EPA 5030 Water MS

Blank (BEH0130-BLK1)

Prepared: 08/09/21 Analyzed: 08/10/21

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|--|------|--------|--|--|--|
| 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 | 10.4 | | " | 13.3 | | 77.8 | 23-173 | | | |
| Surrogate: Toluene-d8 | 13.0 | | " | 13.3 | | 97.9 | 20-170 | | | |
| Surrogate: 4-Bromofluorobenzene | 11.8 | | " | 13.3 | | 88.4 | 21-167 | | | |

LCS (BEH0130-BS1)

Prepared: 08/09/21 Analyzed: 08/10/21

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|--|------|--------|--|--|--|
| Benzene | 36.3 | 1.0 | ug/l | 41.7 | | 87.0 | 51-132 | | | |
| Toluene | 41.5 | 1.0 | " | 41.7 | | 99.6 | 51-138 | | | |
| Ethylbenzene | 45.8 | 1.0 | " | 41.7 | | 110 | 58-146 | | | |
| m,p-Xylene | 96.4 | 2.0 | " | 83.3 | | 116 | 57-144 | | | |
| o-Xylene | 48.6 | 1.0 | " | 41.7 | | 117 | 53-146 | | | |
| Naphthalene | 51.9 | 1.0 | " | 41.7 | | 124 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 42.2 | 1.0 | " | 41.7 | | 101 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 51.2 | 1.0 | " | 41.7 | | 123 | 70-130 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 10.3 | | " | 13.3 | | 77.2 | 23-173 | | | |
| Surrogate: Toluene-d8 | 13.2 | | " | 13.3 | | 99.2 | 20-170 | | | |
| Surrogate: 4-Bromofluorobenzene | 12.2 | | " | 13.3 | | 91.8 | 21-167 | | | |

Matrix Spike (BEH0130-MS1)

Source: 2108078-01

Prepared: 08/09/21 Analyzed: 08/10/21

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|----|------|--------|--|--|--|
| Benzene | 37.0 | 1.0 | ug/l | 41.7 | ND | 88.7 | 34-141 | | | |
| Toluene | 41.2 | 1.0 | " | 41.7 | ND | 98.9 | 27-151 | | | |
| Ethylbenzene | 45.8 | 1.0 | " | 41.7 | ND | 110 | 29-160 | | | |
| m,p-Xylene | 95.0 | 2.0 | " | 83.3 | ND | 114 | 20-166 | | | |
| o-Xylene | 48.0 | 1.0 | " | 41.7 | ND | 115 | 33-159 | | | |
| Naphthalene | 43.0 | 1.0 | " | 41.7 | ND | 103 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 42.4 | 1.0 | " | 41.7 | ND | 102 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 52.0 | 1.0 | " | 41.7 | ND | 125 | 70-130 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 10.7 | | " | 13.3 | | 80.3 | 23-173 | | | |
| Surrogate: Toluene-d8 | 13.1 | | " | 13.3 | | 98.4 | 20-170 | | | |
| Surrogate: 4-Bromofluorobenzene | 12.2 | | " | 13.3 | | 91.4 | 21-167 | | | |

Summit Scientific

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

Project: Mark 11,12,14-35

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

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 BEH0130 - EPA 5030 Water MS

| Matrix Spike Dup (BEH0130-MSD1) | Source: 2108078-01 | | | Prepared: 08/09/21 Analyzed: 08/10/21 | | | | | | |
|----------------------------------|--------------------|-----|------|---------------------------------------|----|------|--------|-------|----|--|
| Benzene | 36.6 | 1.0 | ug/l | 41.7 | ND | 87.9 | 34-141 | 0.870 | 30 | |
| Toluene | 40.6 | 1.0 | " | 41.7 | ND | 97.5 | 27-151 | 1.42 | 30 | |
| Ethylbenzene | 44.3 | 1.0 | " | 41.7 | ND | 106 | 29-160 | 3.20 | 30 | |
| m,p-Xylene | 92.6 | 2.0 | " | 83.3 | ND | 111 | 20-166 | 2.53 | 30 | |
| o-Xylene | 46.5 | 1.0 | " | 41.7 | ND | 112 | 33-159 | 3.15 | 30 | |
| Naphthalene | 40.9 | 1.0 | " | 41.7 | ND | 98.2 | 70-130 | 5.07 | 30 | |
| 1,2,4-Trimethylbenzene | 40.1 | 1.0 | " | 41.7 | ND | 96.3 | 70-130 | 5.62 | 30 | |
| 1,3,5-Trimethylbenzene | 49.0 | 1.0 | " | 41.7 | ND | 117 | 70-130 | 5.95 | 30 | |
| Surrogate: 1,2-Dichloroethane-d4 | 11.7 | | " | 13.3 | | 87.8 | 23-173 | | | |
| Surrogate: Toluene-d8 | 13.2 | | " | 13.3 | | 99.0 | 20-170 | | | |
| Surrogate: 4-Bromofluorobenzene | 12.0 | | " | 13.3 | | 89.6 | 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.



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

Project: Mark 11,12,14-35

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
08/17/21 09:44

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 |