

**PDC Energy, Inc.**  
**Fourth Quarter 2021 Groundwater Monitoring Summary**

November 11, 2021

Eberle 13-32 CHZ Facility  
NESE Section 32 T1N R66W  
Remediation # 15999

This groundwater monitoring summary has been prepared by Tasman Geosciences, Inc. for the Eberle 13-32 CHZ Facility. On October 13, 2021, groundwater monitoring was conducted at all three monitoring wells (BH01 – BH03). Three 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. In addition, the samples were submitted for laboratory analysis of total dissolved solids (TDS) by Method SM 2540C, and chloride and sulfate anions by EPA Method 300.0.

Fourth quarter 2021 analytical results indicated that organic compound concentrations were below the applicable COGCC Table 915-1 standards in all three monitoring well locations. In addition, inorganic parameters were above the applicable regulatory standards and above 1.25x the background concentration of the up-gradient monitoring well (BH01) 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. Analytical results are summarized in Tables 1 and 2. The laboratory analytical report is included in Attachment A.

Per the Condition of Approval (COA) issued by the State and City of Brighton, groundwater monitoring will continue on a quarterly basis to assess and confirm the absence of dissolved-phase impacts at the Eberle 13-32 CHZ production facility.

First quarter 2022 groundwater sampling will be conducted in January 2022.

BH03		
Compound (µg/L)	7/2/2021	10/13/2021
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)	22.34	22.35

BH03

BH01		
Compound (µg/L)	7/2/2021	10/13/2021
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)	15.09	13.65

BH01

BH02		
Compound (µg/L)	7/2/2021	10/13/2021
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)	20.48	19.10

BH02

**Legend**

-  Monitoring Well Location (Collected via Trimble GPS)
-  Groundwater Flow Direction (4Q21)

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System  
 µg/L – Micrograms per liter  
 ft. bgs – Feet below ground surface

0 ft.      80 ft.      160 ft.

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



DATE: July 20, 2021  
 DESIGNED BY: C. Hamlin  
 DRAWN BY: C. Ambler



**TASMAN**  
 GEOSCIENCES  
 Tasman Geosciences, Inc.  
 6855 W. 119<sup>th</sup> Ave.  
 Broomfield, CO 80020

**PDC Energy, Inc. – DJ Basin**  
**Eberle 13-32 CHZ Facility**  
 NESE, Section 32, Township 1 North, Range 66 West  
 Weld County, Colorado

GROUNDWATER  
 ANALYTICAL RESULTS  
 MAP

FIGURE  
 1



BH03		
Compound (mg/L)	7/2/2021	10/13/2021
Chloride	NR	304
Sulfate	NR	2,610
TDS (unit)	NR	2,990

BH01		
Compound (mg/L)	7/2/2021	10/13/2021
Chloride	NR	105
Sulfate	NR	1,590
TDS (unit)	NR	1,750

BH02		
Compound (mg/L)	7/2/2021	10/13/2021
Chloride	NR	593
Sulfate	NR	3,000
TDS (unit)	NR	3,610

**Legend**

- Monitoring Well Location (Collected via Trimble GPS)
- Groundwater Flow Direction (4Q21)

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System  
 mg/L – Micrograms per liter  
 TDS – Total dissolved solids  
 NR – Not reported. Inorganic groundwater analytical results omitted due to laboratory error

0 ft.      80 ft.      160 ft.

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

DATE: October 27, 2021

DESIGNED BY: C. Hamlin

DRAWN BY: C. Ambler

**TASMAN**  
 GEOSCIENCES  
 Tasman Geosciences, Inc.  
 6855 W. 119<sup>th</sup> Ave.  
 Broomfield, CO 80020

**PDC Energy, Inc. – DJ Basin**  
**Eberle 13-32 CHZ Facility**  
 NESE, Section 32, Township 1 North, Range 66 West  
 Weld County, Colorado

**GROUNDWATER**  
**ANALYTICAL RESULTS**  
**MAP**  
**(INORGANIC PARAMETERS)**

**FIGURE**  
**2**



**Legend**

- Monitoring Well Location (Collected via Trimble GPS)
- Groundwater Elevation Contour (Dashed where inferred)
- 4816.00** Groundwater Elevation (ft. AMSL)
- Groundwater Flow Direction (4Q21)

**Notes**

All locations are approximate unless otherwise noted.

GPS - Global Positioning System

0 ft.      80 ft.      160 ft.

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

DATE: October 21, 2021

DESIGNED BY: B. Nelson

DRAWN BY: C. Ambler



**Tasman Geosciences, Inc.**  
6855 W. 119<sup>th</sup> Ave.  
Broomfield, CO 80020

**PDC Energy, Inc. – DJ Basin**  
**Eberle 13-32 CHZ Facility**  
NESE, Section 32, Township 1 North, Range 66 West  
Weld County, Colorado

**GROUNDWATER  
ELEVATION CONTOUR  
MAP (10/13/2021)**

**FIGURE  
3**

**TABLE 1**  
**EBERLE 13-32 CHZ FACILITY**  
**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 <sup>(2)</sup> (ft.)	Groundwater Elevation (ft. AMSL)
<b>COGCC Table 915-1 Groundwater Standard (µg/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	<b>140</b>	<b>67</b>	<b>67</b>	<b>-</b>	<b>-</b>
BH01	4/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	16.04	5007.05
BH01	7/2/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	15.09	5008.00
BH01	10/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	13.65	5009.44
BH02	4/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	21.39	5001.72
BH02	7/2/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	20.48	5002.63
BH02	10/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	19.10	5004.01
BH03	4/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	24.04	4998.74
BH03	7/2/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	22.34	5000.44
BH03	10/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	22.35	5000.43

**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
- 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**  
**EBERLE 13-32 CHZ FACILITY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**  
**INORGANIC PARAMETERS**

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
COGCC Table 915-1 Groundwater Standard (mg/L) <sup>(1)</sup>		<1.25 x BCKG	250 or <1.25 x BCKG	250 or <1.25 x BCKG
BH01	4/19/2021	NR	NR	NR
BH01	7/2/2021	NR	NR	NR
BH01	10/13/2021	1,750	105	1,590
BH02	4/19/2021	NR	NR	NR
BH02	7/2/2021	NR	NR	NR
BH02	10/13/2021	<b>3,610</b>	<b>593</b>	<b>3,000</b>
BH03	4/19/2021	NR	NR	NR
BH03	7/2/2021	NR	NR	NR
BH03	10/13/2021	<b>2,990</b>	<b>304</b>	<b>2,610</b>

**Notes:**

1. Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.

TDS = Total dissolved solids

COGCC = Colorado Oil and Gas Conservation Commission

BCKG = Background

mg/L = Milligrams per liter

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

NR = Not Reported. Inorganic groundwater analytical results omitted due to laboratory error. Case narrative provided in the attached laboratory report.

□ = Up-gradient well location used for background concentration.

**BOLD** = Analytical result is in exceedance of applicable standard.

## Attachment A

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 25, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Eberle 13-32 CHZ Facility

Work Order #2110210

Enclosed are the results of analyses for samples received by Summit Scientific on 10/13/21 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

Muri Premer For Paul Shrewsbury  
President



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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
10/25/21 11:28

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2110210-01	Water	10/13/21 14:27	10/13/21 18:00
BH02	2110210-02	Water	10/13/21 14:23	10/13/21 18:00
BH03	2110210-03	Water	10/13/21 14:39	10/13/21 18:00

Summit Scientific

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

# Summit Scientific

S<sub>2</sub>

2110210

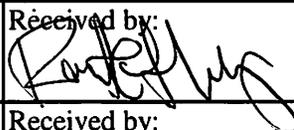
4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310

Page 1 of 1

Client: PDC / Tasman Geosciences 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: Eberle 13-32 CHZ  
 Sampler Name: Ben Wagner Project Number: N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	\$260 BTEX	Naphthalene	1,2,4-TMB	1,3,5-TMB	TDS	Chloride		Sulfate
1	BH01	10/13/21	1427	4			4		X				X	X	X	X	X	X		
2	BH02	10/13/21	1423	4			4		X				X	X	X	X	X	X		
3	BH03	10/13/21	1439	4			4		X				X	X	X	X	X	X		
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: 	Date/Time: <u>10/13/21</u> <u>1545</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>10/13/21</u> <u>1545</u>	Turn Around Time (Check) ___ Same Day      ___ 72 hours ___ 24 hours <u>X</u> Standard ___ 48 hours      ___ Sample Integrity: Temperature Upon Receipt: <u>3.8</u> Samples Intact: <u>Yes</u> No	Notes:
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time:	Received by: 	Date/Time: <u>10-13-21</u> <u>1700</u>		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

2110210

Sample Receipt Checklist

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

Client: ~~Noble~~ **Tasman**

Client Project ID: **Eberle 13-32 CH2**

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

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Temp (°C) **3.8**

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>ON ICE</b>
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? 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 <sup>(1)</sup> ? 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):

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

\_\_\_\_\_  
Custodian Printed Name or Initials

***[Signature]***  
Signature of Custodian

**10-13-21**  
Date/Time



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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/25/21 11:28

**BH01**  
**2110210-01 (Water)**

**Summit Scientific**

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

Date Sampled: **10/13/21 14:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEJ0322	10/18/21	10/19/21	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: **10/13/21 14:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		112 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/13/21 14:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>105</b>	12.0		mg/L	200	BEJ0344	10/19/21	10/19/21	EPA 300.0	
Sulfate	<b>1590</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/13/21 14:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>1750</b>	10.0		mg/L	1	BEJ0320	10/18/21	10/19/21	SM2540C	

Summit Scientific

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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/25/21 11:28

**BH02**  
**2110210-02 (Water)**

**Summit Scientific**

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

Date Sampled: **10/13/21 14:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEJ0322	10/18/21	10/19/21	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: **10/13/21 14:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		111 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/13/21 14:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	593	12.0		mg/L	200	BEJ0344	10/19/21	10/19/21	EPA 300.0	
Sulfate	3000	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/13/21 14:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	3610	10.0		mg/L	1	BEJ0320	10/18/21	10/19/21	SM2540C	

Summit Scientific

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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/25/21 11:28

**BH03**  
**2110210-03 (Water)**

**Summit Scientific**

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

Date Sampled: **10/13/21 14:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEJ0322	10/18/21	10/19/21	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: **10/13/21 14:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		112 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/13/21 14:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>304</b>	12.0		mg/L	200	BEJ0344	10/19/21	10/19/21	EPA 300.0	
Sulfate	<b>2610</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/13/21 14:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2990</b>	10.0		mg/L	1	BEJ0320	10/18/21	10/19/21	SM2540C	

Summit Scientific

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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/25/21 11:28

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

#### Batch BEJ0322 - EPA 5030 Water MS

##### Blank (BEJ0322-BLK1)

Prepared: 10/18/21 Analyzed: 10/19/21

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	14.0		"	13.3		105	23-173			
<i>Surrogate: Toluene-d8</i>	13.6		"	13.3		102	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.1		"	13.3		98.2	21-167			

##### LCS (BEJ0322-BS1)

Prepared: 10/18/21 Analyzed: 10/19/21

Benzene	35.7	1.0	ug/l	33.3		107	51-132			
Toluene	42.9	1.0	"	33.3		129	51-138			
Ethylbenzene	43.1	1.0	"	33.3		129	58-146			
m,p-Xylene	82.0	2.0	"	66.7		123	57-144			
o-Xylene	42.0	1.0	"	33.3		126	53-146			
Naphthalene	39.8	1.0	"	33.3		119	70-130			
1,2,4-Trimethylbenzene	40.6	1.0	"	33.3		122	70-130			
1,3,5-Trimethylbenzene	39.4	1.0	"	33.3		118	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	16.6		"	13.3		124	23-173			
<i>Surrogate: Toluene-d8</i>	13.6		"	13.3		102	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.0		"	13.3		97.1	21-167			

##### Matrix Spike (BEJ0322-MS1)

Source: 2110210-01

Prepared: 10/18/21 Analyzed: 10/19/21

Benzene	34.4	1.0	ug/l	33.3	ND	103	34-141			
Toluene	39.4	1.0	"	33.3	ND	118	27-151			
Ethylbenzene	43.4	1.0	"	33.3	ND	130	29-160			
m,p-Xylene	82.6	2.0	"	66.7	ND	124	20-166			
o-Xylene	42.1	1.0	"	33.3	ND	126	33-159			
Naphthalene	40.1	1.0	"	33.3	ND	120	70-130			
1,2,4-Trimethylbenzene	40.6	1.0	"	33.3	ND	122	70-130			
1,3,5-Trimethylbenzene	39.7	1.0	"	33.3	ND	119	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	15.8		"	13.3		119	23-173			
<i>Surrogate: Toluene-d8</i>	13.5		"	13.3		101	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	12.6		"	13.3		94.9	21-167			

Summit Scientific

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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/25/21 11:28

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

**Batch BEJ0322 - EPA 5030 Water MS**

Matrix Spike Dup (BEJ0322-MSD1)	Source: 2110210-01			Prepared: 10/18/21		Analyzed: 10/19/21					
Benzene	35.0	1.0	ug/l	33.3	ND	105	34-141	1.81	30		
Toluene	42.8	1.0	"	33.3	ND	129	27-151	8.42	30		
Ethylbenzene	42.7	1.0	"	33.3	ND	128	29-160	1.72	30		
m,p-Xylene	81.9	2.0	"	66.7	ND	123	20-166	0.778	30		
o-Xylene	42.3	1.0	"	33.3	ND	127	33-159	0.403	30		
Naphthalene	42.1	1.0	"	33.3	ND	126	70-130	4.89	30		
1,2,4-Trimethylbenzene	40.6	1.0	"	33.3	ND	122	70-130	0.246	30		
1,3,5-Trimethylbenzene	39.6	1.0	"	33.3	ND	119	70-130	0.252	30		
Surrogate: 1,2-Dichloroethane-d4	16.9		"	13.3		127	23-173				
Surrogate: Toluene-d8	13.5		"	13.3		101	20-170				
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	21-167				

Summit Scientific

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PDC Energy  
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 Denver CO, 80203

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/25/21 11:28

**Anions by EPA Method 300.0 - Quality Control**  
**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

**Batch BEJ0344 - General Preparation**

**Blank (BEJ0344-BLK1)**

Prepared & Analyzed: 10/19/21

Chloride	ND	0.0600	mg/L							
Sulfate	ND	0.300	"							

**LCS (BEJ0344-BS1)**

Prepared & Analyzed: 10/19/21

Chloride	2.75	0.0600	mg/L	3.00	91.7	90-110				
Sulfate	14.2	0.300	"	15.0	94.9	90-110				

**Duplicate (BEJ0344-DUP1)**

Source: 2110115-01

Prepared & Analyzed: 10/19/21

Chloride	141	12.0	mg/L		140		0.714	20		
Sulfate	937	60.0	"		885		5.69	20		

**Matrix Spike (BEJ0344-MS1)**

Source: 2110115-01

Prepared & Analyzed: 10/19/21

Chloride	758	12.0	mg/L	600	140	103	80-120			
Sulfate	4660	60.0	"	3000	885	126	80-120			QR-04

Summit Scientific

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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 10/25/21 11:28

**Total Dissolved Solids by SM2540C - Quality Control**

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

**Batch BEJ0320 - General Preparation**

**Blank (BEJ0320-BLK1)**

Prepared: 10/18/21 Analyzed: 10/19/21

Total Dissolved Solids ND 10.0 mg/L

**Duplicate (BEJ0320-DUP1)**

Source: 2110201-01

Prepared: 10/18/21 Analyzed: 10/19/21

Total Dissolved Solids 856 10.0 mg/L 869 1.52 20

Summit Scientific

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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/25/21 11:28

### Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. 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