

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 01, 2022

Karen Olson

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: DWR Permit #137465

Work Order #2202304

Enclosed are the results of analyses for samples received by Summit Scientific on 02/23/22 14:00. 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: DWR Permit #137465
Project Number: AFE #EX-000335
Project Manager: Karen Olson

Reported:
03/01/22 10:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EFF-022322-1052	2202304-01	Water	02/23/22 10:52	02/23/22 14:00
INF-022322-1153	2202304-02	Water	02/23/22 11:53	02/23/22 14:00

Summit Scientific

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S₂

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

2202309

Page 1 of 1

Client: PDC Energy / Tasman Geosciences

Project Manager: Karen Olson

Address: 6855 W. 119th Ave.

E-Mail: Karen.Olson@pdce.com; chamlin@tasman-geo.com

City/State/Zip: Broomfield / CO / 80020

Phone: 303-487-1228

Project Name: DWR Permit # 137465

Sampler Name: *Boyce Goldade*

Project Number: AFE # EX-000335

					Preservative				Matrix				Analysis Requested						Special Instructions																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	RSK-175 (Dissolved Gases)	D1G	D1G Gas Composition	D1G methane (carbon)	D1G methane (Hydrogen)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											</

Relinquished by: <i>Boyce J Goldade</i>	Date/Time: 2/23/22 @ 1400	Received by: <i>[Signature]</i>	Date/Time: 22322 1400	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours <u>X</u> Standard _____ 48 hours _____	Notes: Please provide data in PDF and COGCC EDD formats. COGCC Facility No.: 765500
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: <u>1.6</u> Samples Intact: <u>Yes</u> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂


Sample Receipt Checklist

S2 Work Order# 2202304Client: ADCenergy/Tasman Client Project ID: DWR Permit # 137465Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)Temp (°C) 16

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 ILS
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?	-			24 hrs
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, H ₂ SO ₄ , NaOH, HNO ₃ , etc.			-	
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.

 Custodian Printed Name or Initials

2.23.22
 Date/Time



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Denver CO, 80203

Project: DWR Permit #137465
Project Number: AFE #EX-000335
Project Manager: Karen Olson

Reported:
03/01/22 10:34

EFF-022322-1052
2202304-01 (Water)

Summit Scientific

Dissolved Gases by RSK-175

Date Sampled: **02/23/22 10:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Methane	4.6	1.0	mg/L	100	BFB0287	02/24/22	02/24/22	RSK-175 mod	
Ethane	1.8	1.0	"	"	"	"	"	"	
Propane	1.7	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/22 10:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: Ethene		126 %	70-130		"	"	"	"	

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Project: DWR Permit #137465
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Reported:
03/01/22 10:34

INF-022322-1153
2202304-02 (Water)

Summit Scientific

Dissolved Gases by RSK-175

Date Sampled: **02/23/22 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Methane	9.6	1.0		mg/L	100	BFB0287	02/24/22	02/24/22	RSK-175 mod	
Ethane	2.5	1.0		"	"	"	"	"	"	
Propane	2.9	0.10		"	10	"	"	"	"	

Date Sampled: **02/23/22 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: Ethene</i>		170 %		70-130		"	"	"	"	S-04

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Reported:
03/01/22 10:34

Dissolved Gases by RSK-175 - Quality Control
Summit Scientific

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

Batch BFB0287 - GC

Blank (BFB0287-BLK1)

Prepared & Analyzed: 02/24/22

Methane	ND	0.010	mg/L							
Ethane	ND	0.010	"							
Propane	ND	0.010	"							
Surrogate: Ethene	0.0450		"	0.0364	124	70-130				

LCS (BFB0287-BS1)

Prepared & Analyzed: 02/24/22

Methane	0.039	0.010	mg/L	0.0428	90.3	70-130				
Ethane	0.090	0.010	"	0.0798	113	70-130				
Propane	0.16	0.010	"	0.139	114	70-130				
Surrogate: Ethene	0.0942		"	0.0728	129	70-130				

Duplicate (BFB0287-DUP1)

Source: 2202304-01

Prepared & Analyzed: 02/24/22

Methane	2.7	1.0	mg/L	4.6			50.5	30	QR-03
Ethane	0.84	1.0	"	1.8			71.8	30	QR-03
Propane	0.59	1.0	"	1.7			95.6	30	QR-03
Surrogate: Ethene	0.0451		"	0.0364	124	70-130			

Matrix Spike (BFB0287-MS1)

Source: 2202304-01

Prepared & Analyzed: 02/24/22

Methane	4.5	1.0	mg/L	0.0428	4.6	NR	70-130		QM-05
Ethane	2.5	1.0	"	0.0798	1.8	852	70-130		QM-05
Propane	2.6	1.0	"	0.139	1.7	670	70-130		QM-05
Surrogate: Ethene	0.150		"	0.0728	206	70-130			QM-05

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Notes and Definitions

S-04	A sample matrix effect prevented complete surrogate recovery.
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.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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