TABLE 1
FORMER GUTTERSEN 11, 22-25 & 25E TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH [2] (mg/kg)	pH (units)	EC (mmhos/cm)
COGCC Table 910-1 Soil Standard (mg/kg) [1]			**0.17**	**85**	**100**	**175**	**23**	**500**	**6-9**	**<4**
SS01 @ 4'	1/4/2019	4	<0.00020	<0.0050	<0.0050	<0.010	<0.010	<50	**9.49**	0.757
SS02 @ 3'	1/4/2019	3	NA	NA	NA	NA	NA	NA	8.38	0.478
SS03 @ 3'	1/4/2019	3	NA	NA	NA	NA	NA	NA	**9.06**	0.458
SS04 @ 3'	1/4/2019	3	NA	NA	NA	NA	NA	NA	**9.11**	0.506
SS05 @ 3'	1/4/2019	3	NA	NA	NA	NA	NA	NA	8.46	0.466
SS06 @ 3'	9/30/2019	3	NA	NA	NA	NA	NA	NA	7.82	0.633
SS07 @ 3'	9/30/2019	3	NA	NA	NA	NA	NA	NA	8.00	0.574

Notes:
1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective May 1, 2018.
2. TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.
COGCC = Colorado Oil and Gas Conservation Commission
(<) = Analytical result is less than the indicated laboratory reporting limit.
GRO = Total volatile petroleum hydrocarbons - gasoline range organics
DRO = Total extractable petroleum hydrocarbons - diesel range organics
mg/kg = Milligrams per kilogram
ft. = Feet
bgs = Below ground surface
EC = Electrical conductivity
mmhos/cm = millimhos per centimeter
NA = Constituent not analyzed
BOLD = Analytical result is in exceedance of COGCC soil standards.

TABLE 2
FORMER GUTTERSEN 11, 22-25 & 25E TANK BATTERY
VOC CONCENTRATIONS SUMMARY TABLE

Sample ID	Date Sampled	Depth (ft. bgs)	Sample Location[1]	Field Measured VOC Concentration[2] (ppm)
SS01 @ 4'	1/4/2019	4	Base	10.7
SS02 @ 3'	1/4/2019	3	North Sidewall	5.8
SS03 @ 3'	1/4/2019	3	West Sidewall	1.3
SS04 @ 3'	1/4/2019	3	South Sidewall	2.4
SS05 @ 3'	1/4/2019	3	East Sidewall	0.8
SS06 @ 3'	9/30/2019	3	South Sidewall	0.2
SS07 @ 3'	9/30/2019	3	West Sidewall	0.3

Notes:
1. Refers to the sample location within the excavation area below the former produced water vessel.
2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).
ft. = Feet
bgs = Below ground surface
ppm = Parts per million
= Sample submitted for laboratory analysis.

ATTACHMENT A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 01, 2019

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Guttersen 11,22-25 & 25E

Enclosed are the results of analyses for samples received by Summit Scientific on 09/30/19 18:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager

S2

PDC Energy	Project: Guttersen 11,22-25 & 25E	
1775 Sherman St. STE. 3000	Project Number: [none]	**Reported:**
Denver CO, 80203	Project Manager: Mark Longhurst	10/01/19 06:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS06@3'	1909396-01	Soil	09/30/19 10:25	09/30/19 18:15
SS07@3'	1909396-02	Soil	09/30/19 10:29	09/30/19 18:15

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

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

1909396

Client: PDC Energy | Project Manager: Mark Longhurst

Address: | E-Mail: mark.longhurst@pdce.com

City/State/Zip:

Phone: | Project Name: Guttersen 11, 22-25 & 25E

Sampler Name: Brock Nelson | Project Number:

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	pH	EC							
1	SS06@3'	9/30/19	1025	1			x			x			x	x							
2	SS07@3'	↓	1029	1			x			x			x	x							
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: Date/Time: 9/30/19 1205

Received by: Tasman Lock box Date/Time: 9/30/19 1205

Relinquished by: LOCKBOX Date/Time: 9/30/19 1830

Received by: Date/Time: 9/30/19 1830

Relinquished by: Date/Time:

Received by: Date/Time:

Turn Around Time (Check)

Same Day X | 72 hours ___

24 hours ___ | Standard ___

48 hours ___

Sample Integrity:

Temperature Upon Receipt: 3.2

Samples Intact: Yes No

Notes:

Sample Receipt Checklist

S2 Work Order 1909396

Client: PDC ENERGY Client Project ID: GUTTERSEN 11, 22-25 & 25E

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

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

Temp (°C)	3.2

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.	✓			
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, ect			✓	
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.**

RZ	RZ	9/30/19
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

PDC Energy	Project: Guttersen 11,22-25 & 25E	
1775 Sherman St. STE. 3000	Project Number: [none]	**Reported:**
Denver CO, 80203	Project Manager: Mark Longhurst	10/01/19 06:17

SS06@3'

1909396-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/30/19 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.82**		pH Units	1	1909418	09/30/19	09/30/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **09/30/19 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**0.633**	0.0100	mmhos/cm	1	1909427	09/30/19	09/30/19	EPA 120.1	

PDC Energy	Project: Guttersen 11,22-25 & 25E	
1775 Sherman St. STE. 3000	Project Number: [none]	**Reported:**
Denver CO, 80203	Project Manager: Mark Longhurst	10/01/19 06:17

SS07@3'

1909396-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/30/19 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.00**		pH Units	1	1909418	09/30/19	09/30/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **09/30/19 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**0.574**	0.0100	mmhos/cm	1	1909427	09/30/19	09/30/19	EPA 120.1	

PDC Energy	Project: Guttersen 11,22-25 & 25E	
1775 Sherman St. STE. 3000	Project Number: [none]	**Reported:**
Denver CO, 80203	Project Manager: Mark Longhurst	10/01/19 06:17

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1909418 - General Preparation										
LCS (1909418-BS1)				Prepared & Analyzed: 09/30/19						
pH	9.19		pH Units	9.18		100	95-105			
Duplicate (1909418-DUP1)		**Source: 1909310-01**		Prepared & Analyzed: 09/30/19						
pH	8.60		pH Units		8.60			0.00	20	

S2

PDC Energy	Project: Guttersen 11,22-25 & 25E	
1775 Sherman St. STE. 3000	Project Number: [none]	**Reported:**
Denver CO, 80203	Project Manager: Mark Longhurst	10/01/19 06:17

Specific Conductance by EPA Method 120.1 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1909427 - General Preparation										
Blank (1909427-BLK1)				Prepared & Analyzed: 09/30/19						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (1909427-BS1)				Prepared & Analyzed: 09/30/19						
Specific Conductance (EC)	0.774	0.0100	mmhos/cm	0.750		103	90-110			
Duplicate (1909427-DUP1)		**Source: 1909396-01**		Prepared & Analyzed: 09/30/19						
Specific Conductance (EC)	0.592	0.0100	mmhos/cm		0.633			6.61	20	

Summit Scientific

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PDC Energy	Project: Guttersen 11,22-25 & 25E	
1775 Sherman St. STE. 3000	Project Number: [none]	**Reported:**
Denver CO, 80203	Project Manager: Mark Longhurst	10/01/19 06:17

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