

TABLE 1
FORMER EHRlich 4, 22-7 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 @ 5'	10/29/2018	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	9.59	1.80
SS02 @ 3'	10/29/2018	3	NA	NA	NA	NA	NA	NA	8.40	3.19
SS03 @ 3'	10/29/2018	3	NA	NA	NA	NA	NA	NA	9.58	1.34
SS04 @ 3'	10/29/2018	3	NA	NA	NA	NA	NA	NA	10.0	0.911
SS05 @ 3'	10/29/2018	3	NA	NA	NA	NA	NA	NA	9.31	1.22
BG01 @ 3'	11/16/2018	3	NA	NA	NA	NA	NA	NA	7.64	5.36
SS06 @ 3'	9/27/2019	3	NA	NA	NA	NA	NA	NA	7.50	1.72
SS07 @ 3'	9/27/2019	3	NA	NA	NA	NA	NA	NA	8.16	1.39
SS08 @ 3'	9/27/2019	3	NA	NA	NA	NA	NA	NA	8.37	0.998

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 EHRLICH 4, 22-7 TANK BATTERY
VOC CONCENTRATIONS SUMMARY TABLE

Sample ID	Date Sampled	Depth (ft. bgs)	Sample Location ⁽¹⁾	Field Measured VOC Concentration ⁽²⁾ (ppm)
SS01 @ 5'	10/29/2018	5	Base	0.0
SS02 @ 3'	10/29/2018	3	North Sidewall	0.2
SS03 @ 3'	10/29/2018	3	West Sidewall	0.0
SS04 @ 3'	10/29/2018	3	South Sidewall	0.0
SS05 @ 3'	10/29/2018	3	East Sidewall	0.0
BG01 @ 3'	11/16/2018	3	Background	3.5
SS06 @ 3'	9/27/2019	3	West Sidewall	1.4
SS07 @ 3'	9/27/2019	3	South Sidewall	1.7
SS08 @ 3'	9/27/2019	3	East Sidewall	1.3

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

September 30, 2019

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Ehrlich 4,22-7

Enclosed are the results of analyses for samples received by Summit Scientific on 09/27/19 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



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

Project: Ehrlich 4,22-7

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
09/30/19 06:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS06@3'	1909368-01	Soil	09/27/19 10:35	09/27/19 17:30
SS07@3'	1909368-02	Soil	09/27/19 10:38	09/27/19 17:30
SS08@3'	1909368-03	Soil	09/27/19 10:41	09/27/19 17:30

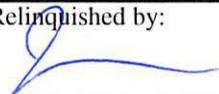
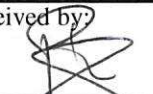
Summit Scientific

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
1909368

Page 1 of 1

Project Manager: Mark Longhurst
E-Mail: mark.longhurst@pdce.com
Project Name: Ehrlich 4, 22-7
Project Number: _____

				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)													Special Instructions
SS06e3'	9/27/19	10:35	1			X			X			X												
SS07e3'	↓	10:38	1			X			X			X												
SS08e3'	↓	10:41	1			X			X			X												
Relinquished by:  Date/Time: 9/27/19 1:00 PM				Received by:  Date/Time: 9/27/19 1730				Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 Hours <input type="checkbox"/>												Notes:				
Relinquished by: _____ Date/Time: _____				Received by: _____ Date/Time: _____				Sample Integrity: Temperature Upon Receipt: 5.6 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
Relinquished by: _____ Date/Time: _____				Received in Lab by: _____ Date/Time: _____																				

Sample Receipt Checklist

S2 Work Order 1909368

Client: TASMAN/PDC Client Project ID: Ehrlich 4,22-7

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

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

Temp (°C)	<u>5.6</u>
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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"/>			
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<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 checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
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 RE

Signature of Custodian [Signature]

Date/Time 09/27/19 1800



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

Project: Ehrlich 4,22-7

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
09/30/19 06:43

SS06@3'
1909368-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/27/19 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.50			pH Units	1	1909391	09/27/19	09/27/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **09/27/19 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.72	0.0100		mmhos/cm	1	1909393	09/27/19	09/27/19	EPA 120.1	

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Denver CO, 80203

Project: Ehrlich 4,22-7

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
09/30/19 06:43

SS07@3'
1909368-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/27/19 10:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.16			pH Units	1	1909391	09/27/19	09/27/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **09/27/19 10:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.39	0.0100		mmhos/cm	1	1909393	09/27/19	09/27/19	EPA 120.1	

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

Project: Ehrlich 4,22-7

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
09/30/19 06:43

SS08@3'
1909368-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/27/19 10:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.37			pH Units	1	1909391	09/27/19	09/27/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **09/27/19 10:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.998	0.0100		mmhos/cm	1	1909393	09/27/19	09/27/19	EPA 120.1	

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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Ehrlich 4,22-7

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
09/30/19 06:43

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

Summit Scientific

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

Batch 1909391 - General Preparation

LCS (1909391-BS1)

Prepared & Analyzed: 09/27/19

pH	9.38		pH Units	9.18	102	95-105
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Duplicate (1909391-DUP1)

Source: 1909290-01

Prepared & Analyzed: 09/27/19

pH	8.70		pH Units	8.67		0.345	20
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Ehrlich 4,22-7

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
09/30/19 06:43

Specific Conductance by EPA Method 120.1 - Quality Control

Summit Scientific

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

Batch 1909393 - General Preparation

Blank (1909393-BLK1)

Prepared & Analyzed: 09/27/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (1909393-BS1)

Prepared & Analyzed: 09/27/19

Specific Conductance (EC) 0.714 0.0100 mmhos/cm 0.750 95.2 90-110

Duplicate (1909393-DUP1)

Source: 1909290-01

Prepared & Analyzed: 09/27/19

Specific Conductance (EC) 1.20 0.0100 mmhos/cm 1.24 3.89 20

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1775 Sherman St. STE. 3000

Denver CO, 80203

Project: Ehrlich 4,22-7

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

09/30/19 06:43

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