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June 05, 2024

Jessica Johannsen  
PDC Energy  
1775 Sherman Street  
Suite 3000  
Denver, CO 80203

Work Order: **HS24051416**

Laboratory Results for: **Stillroven Farm 7**

Dear Jessica Johannsen,

ALS Environmental received 1 sample(s) on May 23, 2024 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER

Tyler Monroe

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**Work Order:** HS24051416

**SAMPLE SUMMARY**

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS24051416-01	Stillroven Farm 7	Water		22-May-2024 11:10	23-May-2024 09:30	<input type="checkbox"/>

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**Work Order:** HS24051416

**CASE NARRATIVE**

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**GC Semivolatiles by Method RSK-175****Batch ID: R468431**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

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**GC Semivolatiles by Method SW8015M****Batch ID: 212566****Sample ID: LCSD-212566**

- The RPD between the LCS and LCSD was outside of the control limit.

**Sample ID: Stillroven Farm 7 (HS24051416-01)**

- The surrogate recoveries could not be determined due to dilution below the calibration range.

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**GC Volatiles by Method SW8015****Batch ID: R468292**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

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**GCMS Volatiles by Method SW8260****Batch ID: R468418**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

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**Metals by Method E200.8****Batch ID: 212688****Sample ID: Stillroven Farm 7 (HS24051416-01)**

- The reporting limit(s) is/are elevated due to dilution for high concentrations of non-target analytes.

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**WetChemistry by Method E300****Batch ID: R468563****Sample ID: HS24051588-01MS**

- MS and MSD are for an unrelated sample (Chloride,Sulfate)

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**WetChemistry by Method SM2320B****Batch ID: R468549**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

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**WetChemistry by Method M2540C****Batch ID: R467943**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: PDC Energy  
 Project: Stillroven Farm 7  
 Sample ID: Stillroven Farm 7  
 Collection Date: 22-May-2024 11:10

**ANALYTICAL REPORT**

WorkOrder:HS24051416  
 Lab ID:HS24051416-01  
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: AKP		
Benzene	ND		100	ug/L	100	04-Jun-2024 19:29
Ethylbenzene	180		100	ug/L	100	04-Jun-2024 19:29
m,p-Xylene	680		200	ug/L	100	04-Jun-2024 19:29
o-Xylene	360		100	ug/L	100	04-Jun-2024 19:29
Toluene	250		100	ug/L	100	04-Jun-2024 19:29
Xylenes, Total	1,000		300	ug/L	100	04-Jun-2024 19:29
Surr: 1,2-Dichloroethane-d4	100.0		70-126	%REC	100	04-Jun-2024 19:29
Surr: 4-Bromofluorobenzene	102		77-113	%REC	100	04-Jun-2024 19:29
Surr: Dibromofluoromethane	103		77-123	%REC	100	04-Jun-2024 19:29
Surr: Toluene-d8	99.3		82-127	%REC	100	04-Jun-2024 19:29
<b>GASOLINE RANGE ORGANICS BY SW8015C</b>		<b>Method:SW8015</b>		Analyst: TS		
Gasoline Range Organics	98.4		25.0	mg/L	500	01-Jun-2024 02:00
Surr: 4-Bromofluorobenzene	88.4		70-123	%REC	500	01-Jun-2024 02:00
<b>DISSOLVED GASES BY RSK-175</b>		<b>Method:RSK-175</b>		Analyst: RG		
Ethane	9.35		1.00	ug/L	1	04-Jun-2024 12:29
Methane	33.2		0.500	ug/L	1	04-Jun-2024 12:29
Propane	4.67		1.00	ug/L	1	05-Jun-2024 11:12
<b>TPH DRO/ORO BY SW8015C</b>		<b>Method:SW8015M</b>		Prep:SW3511 / 25-May-2024 Analyst: SAM		
TPH (Diesel Range)	190		5.4	mg/L	100	30-May-2024 02:55
Surr: 2-Fluorobiphenyl	0	JS	60-135	%REC	100	30-May-2024 02:55
<b>TOTAL METALS BY E200.8, REV 5.4, 1994</b>		<b>Method:E200.8</b>		Prep:E200.8 / 29-May-2024 Analyst: JC		
Calcium	1,210		25.0	mg/L	50	31-May-2024 12:51
Magnesium	ND		1.00	mg/L	2	31-May-2024 12:49
Potassium	103		2.50	mg/L	5	30-May-2024 22:48
Sodium	455		1.00	mg/L	5	30-May-2024 22:48
<b>ANIONS BY E300.0, REV 2.1, 1993</b>		<b>Method:E300</b>		Analyst: TH		
Chloride	2,270		50.0	mg/L	100	05-Jun-2024 14:45
Sulfate	528		5.00	mg/L	10	05-Jun-2024 14:39
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>		Analyst: MH		
Total Dissolved Solids (Residue, Filterable)	7,860		10.0	mg/L	1	28-May-2024 13:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>		Analyst: AR		
Alkalinity, Bicarbonate (As CaCO3)	75.5		5.00	mg/L	1	04-Jun-2024 16:28
Alkalinity, Carbonate (As CaCO3)	53.6		5.00	mg/L	1	04-Jun-2024 16:28
Alkalinity, Total (As CaCO3)	129		5.00	mg/L	1	04-Jun-2024 16:28

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

<b>Batch ID:</b> 212566	<b>Start Date:</b> 25 May 2024 13:55	<b>End Date:</b> 25 May 2024 13:55
<b>Method:</b> SW3511	<b>Prep Code:</b> 3511_DRO	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS24051416-01		30.72 (mL)	2 (mL)	0.0651	40 mL Amber

<b>Batch ID:</b> 212688	<b>Start Date:</b> 29 May 2024 13:00	<b>End Date:</b> 29 May 2024 13:00
<b>Method:</b> TOTAL METALS PREP BY E200.8, REV 5.4, 1994	<b>Prep Code:</b> 200.8PR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS24051416-01		10 (mL)	10 (mL)	1	250 mL plastic, HNO3 to pH <2

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> 212566 ( 0 )		<b>Test Name :</b> TPH DRO/ORO BY SW8015C			<b>Matrix:</b> Water	
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10		25 May 2024 13:55	30 May 2024 02:55	100
<b>Batch ID:</b> 212688 ( 0 )		<b>Test Name :</b> TOTAL METALS BY E200.8, REV 5.4, 1994			<b>Matrix:</b> Water	
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10		29 May 2024 13:00	31 May 2024 12:51	50
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10		29 May 2024 13:00	31 May 2024 12:49	2
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10		29 May 2024 13:00	30 May 2024 22:48	5
<b>Batch ID:</b> R467943 ( 0 )		<b>Test Name :</b> TOTAL DISSOLVED SOLIDS BY SM2540C-2011			<b>Matrix:</b> Water	
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10			28 May 2024 13:00	1
<b>Batch ID:</b> R468292 ( 0 )		<b>Test Name :</b> GASOLINE RANGE ORGANICS BY SW8015C			<b>Matrix:</b> Water	
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10			01 Jun 2024 02:00	500
<b>Batch ID:</b> R468418 ( 0 )		<b>Test Name :</b> LOW LEVEL VOLATILES BY SW8260C			<b>Matrix:</b> Water	
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10			04 Jun 2024 19:29	100
<b>Batch ID:</b> R468431 ( 0 )		<b>Test Name :</b> DISSOLVED GASES BY RSK-175			<b>Matrix:</b> Water	
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10			05 Jun 2024 11:12	1
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10			04 Jun 2024 12:29	1
<b>Batch ID:</b> R468549 ( 0 )		<b>Test Name :</b> ALKALINITY BY -2011			<b>Matrix:</b> Water	
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10			04 Jun 2024 16:28	1
<b>Batch ID:</b> R468563 ( 0 )		<b>Test Name :</b> ANIONS BY E300.0, REV 2.1, 1993			<b>Matrix:</b> Water	
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10			05 Jun 2024 14:45	100
HS24051416-01	Stillroven Farm 7	22 May 2024 11:10			05 Jun 2024 14:39	10

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QC BATCH REPORT**

Batch ID: 212566 ( 0 )		Instrument: FID-16		Method: TPH DRO/ORO BY SW8015C						
<b>MBLK</b>	Sample ID: <b>MBLK-212566</b>	Units: <b>mg/L</b>		Analysis Date: <b>29-May-2024 13:10</b>						
Client ID:	Run ID: <b>FID-16_468207</b>		SeqNo: <b>8041522</b>		PrepDate: <b>25-May-2024</b>		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	ND	0.050								
Surr: 2-Fluorobiphenyl	0.0522	0.0050	0.06	0	87.0	60 - 135				
<b>LCS</b>	Sample ID: <b>LCS-212566</b>	Units: <b>mg/L</b>		Analysis Date: <b>29-May-2024 13:39</b>						
Client ID:	Run ID: <b>FID-16_468207</b>		SeqNo: <b>8041523</b>		PrepDate: <b>25-May-2024</b>		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	0.5193	0.050	0.6	0	86.6	70 - 130				
Surr: 2-Fluorobiphenyl	0.07283	0.0050	0.06	0	121	60 - 135				
<b>LCSD</b>	Sample ID: <b>LCSD-212566</b>	Units: <b>mg/L</b>		Analysis Date: <b>29-May-2024 14:09</b>						
Client ID:	Run ID: <b>FID-16_468207</b>		SeqNo: <b>8041524</b>		PrepDate: <b>25-May-2024</b>		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	0.5251	0.050	0.6	0	87.5	70 - 130	0.5193	1.1	20	
Surr: 2-Fluorobiphenyl	0.0496	0.0050	0.06	0	82.7	60 - 135	0.07283	37.9	20	R

The following samples were analyzed in this batch: HS24051416-01

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QC BATCH REPORT**

Batch ID: R468431 ( 0 )		Instrument: FID-4		Method: DISSOLVED GASES BY RSK-175						
<b>MBLK</b>	Sample ID: <b>MBLK-240604</b>	Units: <b>ug/L</b>		Analysis Date: <b>04-Jun-2024 08:47</b>						
Client ID:	Run ID: <b>FID-4_468431</b>		SeqNo: <b>8047057</b>		PrepDate:		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	ND	1.00								
Methane	ND	0.500								
Propane	ND	1.50								

<b>LCS</b>	Sample ID: <b>LCS-240604</b>	Units: <b>ug/L</b>		Analysis Date: <b>04-Jun-2024 08:57</b>						
Client ID:	Run ID: <b>FID-4_468431</b>		SeqNo: <b>8047058</b>		PrepDate:		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	16.6	1.00	18.04	0	92.0	75 - 125				
Methane	9.124	0.500	9.647	0	94.6	75 - 125				

<b>LCSD</b>	Sample ID: <b>LCSD-240604</b>	Units: <b>ug/L</b>		Analysis Date: <b>04-Jun-2024 09:07</b>						
Client ID:	Run ID: <b>FID-4_468431</b>		SeqNo: <b>8047059</b>		PrepDate:		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	16.32	1.00	18.04	0	90.4	75 - 125	16.6	1.71	30	
Methane	8.796	0.500	9.647	0	91.2	75 - 125	9.124	3.66	30	

The following samples were analyzed in this batch: HS24051416-01



**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QC BATCH REPORT**

Batch ID: R468292 ( 0 )		Instrument: FID-20		Method: GASOLINE RANGE ORGANICS BY SW8015C						
<b>MBLK</b>	Sample ID: MBLK-240531	Units: mg/L		Analysis Date: 31-May-2024 21:23						
Client ID:	Run ID: FID-20_468292		SeqNo: 8043484		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	ND	0.0500								
Surr: 4-Bromofluorobenzene	0.07988	0.00500	0.1	0	79.9	70 - 121				
<b>LCS</b>	Sample ID: LCS-240531	Units: mg/L		Analysis Date: 31-May-2024 20:42						
Client ID:	Run ID: FID-20_468292		SeqNo: 8043482		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9698	0.0500	1	0	97.0	76 - 124				
Surr: 4-Bromofluorobenzene	0.09685	0.00500	0.1	0	96.8	52 - 138				
<b>LCSD</b>	Sample ID: LCSD-240531	Units: mg/L		Analysis Date: 31-May-2024 20:55						
Client ID:	Run ID: FID-20_468292		SeqNo: 8043483		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8873	0.0500	1	0	88.7	76 - 124	0.9698	8.88	20	
Surr: 4-Bromofluorobenzene	0.09232	0.00500	0.1	0	92.3	52 - 138	0.09685	4.78	20	
The following samples were analyzed in this batch: HS24051416-01										

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QC BATCH REPORT**

Batch ID: 212688 ( 0 )		Instrument: ICPMS07		Method: TOTAL METALS BY E200.8, REV 5.4, 1994					
<b>MBLK</b>	Sample ID: <b>MBLK-212688</b>	Units: <b>ug/L</b>		Analysis Date: <b>30-May-2024 22:11</b>					
Client ID:	Run ID: <b>ICPMS07_468043</b>	SeqNo: <b>8039409</b>		PrepDate: <b>29-May-2024</b>		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Calcium	ND	500							
Magnesium	ND	500							
Potassium	ND	500							
Sodium	ND	200							

<b>LCS</b>	Sample ID: <b>LCS-212688</b>	Units: <b>ug/L</b>		Analysis Date: <b>30-May-2024 22:14</b>					
Client ID:	Run ID: <b>ICPMS07_468043</b>	SeqNo: <b>8039410</b>		PrepDate: <b>29-May-2024</b>		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Calcium	4771	500	5000	0	95.4	85 - 115			
Magnesium	4733	500	5000	0	94.7	85 - 115			
Potassium	4710	500	5000	0	94.2	85 - 115			
Sodium	4800	200	5000	0	96.0	85 - 115			

<b>MS</b>	Sample ID: <b>HS24051447-06MS</b>	Units: <b>ug/L</b>		Analysis Date: <b>30-May-2024 22:26</b>					
Client ID:	Run ID: <b>ICPMS07_468043</b>	SeqNo: <b>8039415</b>		PrepDate: <b>29-May-2024</b>		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Calcium	32840	500	5000	28240	92.0	70 - 130			O
Magnesium	25850	500	5000	21330	90.3	70 - 130			O
Potassium	9363	500	5000	4697	93.3	70 - 130			
Sodium	53430	200	5000	48850	91.5	70 - 130			O

<b>MS</b>	Sample ID: <b>HS24051435-01MS</b>	Units: <b>ug/L</b>		Analysis Date: <b>30-May-2024 22:19</b>					
Client ID:	Run ID: <b>ICPMS07_468043</b>	SeqNo: <b>8039412</b>		PrepDate: <b>29-May-2024</b>		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Calcium	24030	500	5000	18070	119	70 - 130			
Magnesium	11070	500	5000	5911	103	70 - 130			
Potassium	7920	500	5000	2880	101	70 - 130			
Sodium	14570	200	5000	9290	106	70 - 130			

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QC BATCH REPORT**

Batch ID: 212688 ( 0 )		Instrument: ICPMS07		Method: TOTAL METALS BY E200.8, REV 5.4, 1994							
<b>MSD</b>	Sample ID: HS24051447-06MSD	Units: ug/L		Analysis Date: 30-May-2024 22:28							
Client ID:	Run ID: ICPMS07_468043		SeqNo: 8039416		PrepDate: 29-May-2024		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Calcium	33640	500	5000	28240	108	70 - 130	32840	2.42	20	O	
Magnesium	26420	500	5000	21330	102	70 - 130	25850	2.17	20	O	
Potassium	9618	500	5000	4697	98.4	70 - 130	9363	2.69	20		
Sodium	54340	200	5000	48850	110	70 - 130	53430	1.7	20	O	

<b>MSD</b>	Sample ID: HS24051435-01MSD	Units: ug/L		Analysis Date: 30-May-2024 22:21							
Client ID:	Run ID: ICPMS07_468043		SeqNo: 8039413		PrepDate: 29-May-2024		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Calcium	23360	500	5000	18070	106	70 - 130	24030	2.86	20		
Magnesium	10680	500	5000	5911	95.5	70 - 130	11070	3.51	20		
Potassium	7644	500	5000	2880	95.3	70 - 130	7920	3.55	20		
Sodium	14100	200	5000	9290	96.2	70 - 130	14570	3.29	20		

The following samples were analyzed in this batch: HS24051416-01

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QC BATCH REPORT**

Batch ID: R468418 ( 0 )		Instrument: VOA4		Method: LOW LEVEL VOLATILES BY SW8260C					
<b>MBLK</b>	Sample ID: VBLKW-240604	Units: ug/L		Analysis Date: 04-Jun-2024 11:41					
Client ID:	Run ID: VOA4_468418	SeqNo: 8045864		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	ND	1.0							
Ethylbenzene	ND	1.0							
m,p-Xylene	ND	2.0							
o-Xylene	ND	1.0							
Toluene	ND	1.0							
Xylenes, Total	ND	3.0							
Surr: 1,2-Dichloroethane-d4	50.02	1.0	50	0	100	70 - 123			
Surr: 4-Bromofluorobenzene	48.99	1.0	50	0	98.0	77 - 113			
Surr: Dibromofluoromethane	51.32	1.0	50	0	103	73 - 126			
Surr: Toluene-d8	49.57	1.0	50	0	99.1	81 - 120			

<b>LCS</b>	Sample ID: VLCSW-240604	Units: ug/L		Analysis Date: 04-Jun-2024 10:33					
Client ID:	Run ID: VOA4_468418	SeqNo: 8045862		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	18.69	1.0	20	0	93.5	74 - 120			
Ethylbenzene	19.41	1.0	20	0	97.0	77 - 117			
m,p-Xylene	38.86	2.0	40	0	97.1	77 - 122			
o-Xylene	18.62	1.0	20	0	93.1	75 - 119			
Toluene	18.68	1.0	20	0	93.4	77 - 118			
Xylenes, Total	57.48	3.0	60	0	95.8	75 - 122			
Surr: 1,2-Dichloroethane-d4	49.7	1.0	50	0	99.4	70 - 123			
Surr: 4-Bromofluorobenzene	49.86	1.0	50	0	99.7	77 - 113			
Surr: Dibromofluoromethane	49.83	1.0	50	0	99.7	73 - 126			
Surr: Toluene-d8	50.4	1.0	50	0	101	81 - 120			

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QC BATCH REPORT**

Batch ID: R468418 ( 0 )		Instrument: VOA4		Method: LOW LEVEL VOLATILES BY SW8260C					
<b>LCSD</b>		Sample ID: <b>VLCS DW-240604</b>		Units: <b>ug/L</b>		Analysis Date: <b>04-Jun-2024 10:55</b>			
Client ID:		Run ID: <b>VOA4_468418</b>		SeqNo: <b>8045863</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Benzene	18.87	1.0	20	0	94.3	74 - 120	18.69	0.942	20
Ethylbenzene	18.82	1.0	20	0	94.1	77 - 117	19.41	3.08	20
m,p-Xylene	38.76	2.0	40	0	96.9	77 - 122	38.86	0.267	20
o-Xylene	19.22	1.0	20	0	96.1	75 - 119	18.62	3.17	20
Toluene	18.69	1.0	20	0	93.4	77 - 118	18.68	0.0788	20
Xylenes, Total	57.97	3.0	60	0	96.6	75 - 122	57.48	0.858	20
Surr: 1,2-Dichloroethane-d4	50.55	1.0	50	0	101	70 - 123	49.7	1.68	20
Surr: 4-Bromofluorobenzene	51.05	1.0	50	0	102	77 - 113	49.86	2.35	20
Surr: Dibromofluoromethane	50.9	1.0	50	0	102	73 - 126	49.83	2.12	20
Surr: Toluene-d8	50.27	1.0	50	0	101	81 - 120	50.4	0.252	20

<b>MS</b>		Sample ID: <b>HS24051465-03MS</b>		Units: <b>ug/L</b>		Analysis Date: <b>04-Jun-2024 20:15</b>			
Client ID:		Run ID: <b>VOA4_468418</b>		SeqNo: <b>8047084</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Benzene	18.98	1.0	20	0	94.9	70 - 127			
Ethylbenzene	19.27	1.0	20	0	96.3	70 - 124			
m,p-Xylene	40.12	2.0	40	0	100	70 - 130			
o-Xylene	19.51	1.0	20	0	97.6	70 - 124			
Toluene	18.78	1.0	20	0	93.9	70 - 123			
Xylenes, Total	59.63	3.0	60	0	99.4	70 - 130			
Surr: 1,2-Dichloroethane-d4	49.45	1.0	50	0	98.9	70 - 126			
Surr: 4-Bromofluorobenzene	51.04	1.0	50	0	102	77 - 113			
Surr: Dibromofluoromethane	52.1	1.0	50	0	104	77 - 123			
Surr: Toluene-d8	50.2	1.0	50	0	100	82 - 127			

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QC BATCH REPORT**

Batch ID: R468418 ( 0 )		Instrument: VOA4		Method: LOW LEVEL VOLATILES BY SW8260C						
<b>MSD</b>		Sample ID: HS24051465-03MSD		Units: ug/L		Analysis Date: 04-Jun-2024 20:37				
Client ID:		Run ID: VOA4_468418		SeqNo: 8047085		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.94	1.0	20	0	89.7	70 - 127	18.98	5.6	20	
Ethylbenzene	17.69	1.0	20	0	88.4	70 - 124	19.27	8.57	20	
m,p-Xylene	37.27	2.0	40	0	93.2	70 - 130	40.12	7.36	20	
o-Xylene	17.84	1.0	20	0	89.2	70 - 124	19.51	8.94	20	
Toluene	17.89	1.0	20	0	89.5	70 - 123	18.78	4.86	20	
Xylenes, Total	55.11	3.0	60	0	91.8	70 - 130	59.63	7.87	20	
Surr: 1,2-Dichloroethane-d4	50.78	1.0	50	0	102	70 - 126	49.45	2.65	20	
Surr: 4-Bromofluorobenzene	51.4	1.0	50	0	103	77 - 113	51.04	0.707	20	
Surr: Dibromofluoromethane	52.71	1.0	50	0	105	77 - 123	52.1	1.15	20	
Surr: Toluene-d8	49.64	1.0	50	0	99.3	82 - 127	50.2	1.13	20	
The following samples were analyzed in this batch: HS24051416-01										

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QC BATCH REPORT**

Batch ID: R467943 ( 0 )		Instrument: Balance1		Method: TOTAL DISSOLVED SOLIDS BY SM2540C-2011					
MBLK	Sample ID: WMBLK-05282024	Units: mg/L		Analysis Date: 28-May-2024 13:00					
Client ID:	Run ID: Balance1_467943	SeqNo: 8035835		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Total Dissolved Solids (Residue, Filterable)		ND	10.0						
LCS	Sample ID: WLCS-05282024	Units: mg/L		Analysis Date: 28-May-2024 13:00					
Client ID:	Run ID: Balance1_467943	SeqNo: 8035834		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Total Dissolved Solids (Residue, Filterable)		928	10.0	1000	0	92.8	85 - 115		
DUP	Sample ID: HS24051636-10 DUP	Units: mg/L		Analysis Date: 28-May-2024 13:00					
Client ID:	Run ID: Balance1_467943	SeqNo: 8035833		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Total Dissolved Solids (Residue, Filterable)		234	10.0			234		0	20
DUP	Sample ID: HS24051636-03 DUP	Units: mg/L		Analysis Date: 28-May-2024 13:00					
Client ID:	Run ID: Balance1_467943	SeqNo: 8035825		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Total Dissolved Solids (Residue, Filterable)		470	10.0			468		0.426	20
The following samples were analyzed in this batch:		HS24051416-01							

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QC BATCH REPORT**

Batch ID: R468549 ( 0 )		Instrument: Skalar 03		Method: ALKALINITY BY -2011					
<b>MBLK</b>	Sample ID: MBLK-06042024	Units: mg/L		Analysis Date: 04-Jun-2024 15:52					
Client ID:	Run ID: Skalar 03_468549	SeqNo: 8048144		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.00							
Alkalinity, Carbonate (As CaCO3)	ND	5.00							
Alkalinity, Total (As CaCO3)	ND	5.00							

<b>LCS</b>	Sample ID: LCS-06042024	Units: mg/L		Analysis Date: 04-Jun-2024 15:59					
Client ID:	Run ID: Skalar 03_468549	SeqNo: 8048145		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Carbonate (As CaCO3)	931.2	5.00	1000	0	93.1	85 - 115			
Alkalinity, Total (As CaCO3)	957	5.00	1000	0	95.7	85 - 115			

<b>LCSD</b>	Sample ID: LCSD-06042024	Units: mg/L		Analysis Date: 04-Jun-2024 16:05					
Client ID:	Run ID: Skalar 03_468549	SeqNo: 8048146		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Carbonate (As CaCO3)	930.2	5.00	1000	0	93.0	85 - 115	931.2	0.107	20
Alkalinity, Total (As CaCO3)	956.4	5.00	1000	0	95.6	85 - 115	957	0.0627	20

<b>DUP</b>	Sample ID: HS24051538-12DUP	Units: mg/L		Analysis Date: 04-Jun-2024 16:43					
Client ID:	Run ID: Skalar 03_468549	SeqNo: 8048153		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Bicarbonate (As CaCO3)	98.8	5.00					96.9	1.94	20
Alkalinity, Carbonate (As CaCO3)	ND	5.00					0	0	20
Alkalinity, Total (As CaCO3)	98.8	5.00					96.9	1.94	20

The following samples were analyzed in this batch: HS24051416-01



**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QC BATCH REPORT**

Batch ID: R468563 ( 0 )		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993					
<b>MBLK</b>	Sample ID: MBLK	Units: mg/L		Analysis Date: 05-Jun-2024 11:07					
Client ID:	Run ID: ICS-Integrion_468563		SeqNo: 8048375		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	ND	0.500							
Sulfate	ND	0.500							

<b>LCS</b>	Sample ID: LCS	Units: mg/L		Analysis Date: 05-Jun-2024 11:19					
Client ID:	Run ID: ICS-Integrion_468563		SeqNo: 8048376		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	20.65	0.500	20	0	103	90 - 110			
Sulfate	19.8	0.500	20	0	99.0	90 - 110			

<b>MS</b>	Sample ID: HS24051588-01MS	Units: mg/L		Analysis Date: 05-Jun-2024 14:28					
Client ID:	Run ID: ICS-Integrion_468563		SeqNo: 8048402		PrepDate:		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	6354	50.0	1000	5506	84.8	80 - 120			O
Sulfate	2224	50.0	1000	1525	69.9	80 - 120			S

<b>MS</b>	Sample ID: HS24051463-09MS	Units: mg/L		Analysis Date: 05-Jun-2024 13:23					
Client ID:	Run ID: ICS-Integrion_468563		SeqNo: 8048395		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	39.96	0.500	10	31.77	81.9	80 - 120			
Sulfate	25.94	0.500	10	14.84	111	80 - 120			

<b>MSD</b>	Sample ID: HS24051588-01MSD	Units: mg/L		Analysis Date: 05-Jun-2024 14:33					
Client ID:	Run ID: ICS-Integrion_468563		SeqNo: 8048403		PrepDate:		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	6294	50.0	1000	5506	78.8	80 - 120	6354	0.946	20 SO
Sulfate	2249	50.0	1000	1525	72.4	80 - 120	2224	1.1	20 S

Client:

Project:

WorkOrder:

PDC Energy

Stillroven Farm 7

HS24051416

QC BATCH REPORT

Batch ID: R468563 ( 0 )		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993					
MSD	Sample ID: HS24051463-09MSD	Units: mg/L		Analysis Date: 05-Jun-2024 13:29					
Client ID:	Run ID: ICS-Integrion_468563		SeqNo: 8048396		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	39.84	0.500	10	31.77	80.7	80 - 120	39.96	0.301	20
Sulfate	23.51	0.500	10	14.84	86.6	80 - 120	25.94	9.84	20
The following samples were analyzed in this batch: HS24051416-01									

**Client:** PDC Energy  
**Project:** Stillroven Farm 7  
**WorkOrder:** HS24051416

**QUALIFIERS,  
ACRONYMS, UNITS**

<b>Qualifier</b>	<b>Description</b>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

<b>Acronym</b>	<b>Description</b>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<b>Unit Reported</b>	<b>Description</b>
mg/L	Milligrams per Liter

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**CERTIFICATIONS,ACCREDITATIONS & LICENSES**

Agency	Number	Expire Date
Arkansas	88-00356_2024	27-Mar-2025
California	2919; 2025	30-Apr-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Kentucky	123043	30-Apr-2025
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624 - 2024	31-Dec-2024
Oklahoma	2023-140	31-Aug-2024
Tennessee	04016	30-Apr-2025
Texas	T104704231 TX-C24-00130	30-Apr-2025
Utah	TX026932023-14	31-Jul-2024

## Sample Receipt Checklist

Work Order ID: HS24051416

Date/Time Received: **23-May-2024 09:30**

Client Name: PDC Energy 80203

Received by: **Paresh M. Giga**

Completed By: <u>/S/ Paresh M. Giga</u>	23-May-2024 14:56	Reviewed by: <u>/S/ Tyler Monroe</u>	24-May-2024 12:17
eSignature	Date/Time	eSignature	Date/Time

Matrices: **Water**Carrier name: **FedEx Priority Overnight**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	1 Page(s)
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	COC IDs:none
Samplers name present on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Temperature(s)/Thermometer(s):

1.4C/1.5C U/C IR31

Cooler(s)/Kit(s):

51708

Date/Time sample(s) sent to storage:

5/23/24 15:10

Water - VOA vials have zero headspace?

Yes ☐ No ☒ No VOA vials submitted ☐

Water - pH acceptable upon receipt?

Yes ☒ No ☐ N/A ☐

pH adjusted?

Yes ☐ No ☒ N/A ☐

pH adjusted by:

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

Corrective Action:



ORIGIN ID:GXVA (970) 305-1648  
KAREN CRAVEN  
ALS  
965 E 11TH ST

LOVELAND, CO 80537  
UNITED STATES US

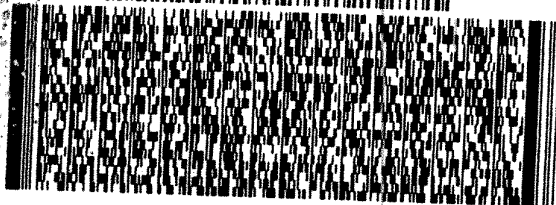
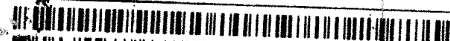
SHIP DATE: 22MAY24  
ACTWGT: 53.35 LB  
CAD: 0760439/CAFE3709  
DIMS: 24x14x13 IN

BILL THIRD PARTY

TO **SAMPLE RECEIVING**  
**ALS HOUSTON**  
**10450 STANCLIFF RD**  
**SUITE 210**  
**HOUSTON TX 77099**

(281) 530-5856

PO: 967554812



**FedEx**  
Express



J231022110201W

TRK# 7122 9262 0615  
0201

**THU - 23 MAY 10:30A**  
**PRIORITY OVERNIGHT**

**NA SGRA**

**77099**  
**TX-US IAH**



Per # 1627743M MTW EXP 0322