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10450 Stancliff Rd. Suite 210  
Houston, TX 77099  
T: +1 281 530 5656  
F: +1 281 530 5887

June 17, 2024

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

Work Order: **HS24060201**

Laboratory Results for: **B-Farm LD 18-034HC**

Dear Jessica Johannsen,

ALS Environmental received 1 sample(s) on Jun 05, 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: B-Farm LD 18-034HC  
Work Order: HS24060201

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS24060201-01	B-Farm LD 18-034HC	Water		03-Jun-2024 11:00	05-Jun-2024 09:35	<input type="checkbox"/>

**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**Work Order:** HS24060201

**CASE NARRATIVE**

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**GC Semivolatiles by Method RSK-175****Batch ID: R468937**

- 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: 213197****Sample ID: B-Farm LD 18-034HC (HS24060201-01)**

- 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: R469649**

- 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: R469217****Sample ID: B-Farm LD 18-034HC (HS24060201-01)**

- Lowest practical dilution due to sample matrix and/or high concentration of target/non-target analyte(s).

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**Metals by Method E200.8****Batch ID: 213432****Sample ID: HS24060327-02MS**

- MS and MSD are for an unrelated sample

**Sample ID: HS24060327-03MS**

- MS and MSD are for an unrelated sample

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**WetChemistry by Method SM2320B****Batch ID: R469454**

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

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**WetChemistry by Method E300****Batch ID: R469246****Sample ID: HS24060309-01MS**

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

**Sample ID: HS24060327-01MS**

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

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**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**Work Order:** HS24060201

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**CASE NARRATIVE**

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**WetChemistry by Method M2540C**

**Batch ID: R468833**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
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Client: PDC Energy  
 Project: B-Farm LD 18-034HC  
 Sample ID: B-Farm LD 18-034HC  
 Collection Date: 03-Jun-2024 11:00

**ANALYTICAL REPORT**

WorkOrder:HS24060201  
 Lab ID:HS24060201-01  
 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	12-Jun-2024 20:09
Ethylbenzene	ND		100	ug/L	100	12-Jun-2024 20:09
m,p-Xylene	ND		200	ug/L	100	12-Jun-2024 20:09
o-Xylene	ND		100	ug/L	100	12-Jun-2024 20:09
<b>Toluene</b>	<b>150</b>		<b>100</b>	<b>ug/L</b>	100	12-Jun-2024 20:09
Xylenes, Total	ND		300	ug/L	100	12-Jun-2024 20:09
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>98.1</i>		<i>70-126</i>	<i>%REC</i>	<i>100</i>	<i>12-Jun-2024 20:09</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>97.7</i>		<i>77-113</i>	<i>%REC</i>	<i>100</i>	<i>12-Jun-2024 20:09</i>
<i>Surr: Dibromofluoromethane</i>	<i>103</i>		<i>77-123</i>	<i>%REC</i>	<i>100</i>	<i>12-Jun-2024 20:09</i>
<i>Surr: Toluene-d8</i>	<i>99.0</i>		<i>82-127</i>	<i>%REC</i>	<i>100</i>	<i>12-Jun-2024 20:09</i>
<b>GASOLINE RANGE ORGANICS BY SW8015C</b>		<b>Method:SW8015</b>		Analyst: TS		
Gasoline Range Organics	ND		25.0	mg/L	500	17-Jun-2024 13:20
<i>Surr: 4-Bromofluorobenzene</i>	<i>84.6</i>		<i>70-123</i>	<i>%REC</i>	<i>500</i>	<i>17-Jun-2024 13:20</i>
<b>DISSOLVED GASES BY RSK-175</b>		<b>Method:RSK-175</b>		Analyst: RG		
Ethane	ND		200	ug/L	200	10-Jun-2024 14:05
<b>Methane</b>	<b>5,610</b>		<b>100</b>	<b>ug/L</b>	200	10-Jun-2024 14:05
<b>Propane</b>	<b>36.0</b>		<b>1.00</b>	<b>ug/L</b>	1	10-Jun-2024 11:07
<b>TPH DRO/ORO BY SW8015C</b>		<b>Method:SW8015M</b>		Prep:SW3511 / 07-Jun-2024 Analyst: SAM		
<b>TPH (Diesel Range)</b>	<b>22</b>		<b>0.53</b>	<b>mg/L</b>	10	10-Jun-2024 12:55
<i>Surr: 2-Fluorobiphenyl</i>	<i>0</i>	<i>JS</i>	<i>60-135</i>	<i>%REC</i>	<i>10</i>	<i>10-Jun-2024 12:55</i>
<b>TOTAL METALS BY E200.8, REV 5.4, 1994</b>		<b>Method:E200.8</b>		Prep:E200.8 / 12-Jun-2024 Analyst: JC		
<b>Calcium</b>	<b>457</b>		<b>2.50</b>	<b>mg/L</b>	5	14-Jun-2024 15:04
<b>Magnesium</b>	<b>7.83</b>		<b>2.50</b>	<b>mg/L</b>	5	14-Jun-2024 15:04
<b>Potassium</b>	<b>253</b>		<b>2.50</b>	<b>mg/L</b>	5	14-Jun-2024 15:04
<b>Sodium</b>	<b>1,520</b>		<b>10.0</b>	<b>mg/L</b>	50	17-Jun-2024 14:11
<b>ANIONS BY E300.0, REV 2.1, 1993</b>		<b>Method:E300</b>		Analyst: TH		
<b>Chloride</b>	<b>2,360</b>		<b>50.0</b>	<b>mg/L</b>	100	12-Jun-2024 11:45
<b>Sulfate</b>	<b>229</b>		<b>5.00</b>	<b>mg/L</b>	10	12-Jun-2024 11:39
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>		Analyst: MH		
Total Dissolved Solids (Residue, Filterable)	4,950		10.0	mg/L	1	07-Jun-2024 09:30
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>		Analyst: AR		
Alkalinity, Bicarbonate (As CaCO3)	270		100	mg/L	20	14-Jun-2024 10:46
Alkalinity, Carbonate (As CaCO3)	520		100	mg/L	20	14-Jun-2024 10:46
Alkalinity, Total (As CaCO3)	790		100	mg/L	20	14-Jun-2024 10:46

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

Weight / Prep Log

Client: PDC Energy  
Project: B-Farm LD 18-034HC  
WorkOrder: HS24060201

Batch ID: 213197	Start Date: 07 Jun 2024 09:00	End Date: 07 Jun 2024 09:00
Method: SW3511		Prep Code: 3511_DRO

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS24060201-01		30.97 (mL)	2 (mL)	0.06458	40 mL Amber

Batch ID: 213432	Start Date: 12 Jun 2024 10:00	End Date: 12 Jun 2024 10:00
Method: TOTAL METALS PREP BY E200.8, REV 5.4, 1994		Prep Code: 200.8PR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS24060201-01		10 (mL)	10 (mL)	1	250 mL plastic, HNO3 to pH <2

**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**WorkOrder:** HS24060201

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> 213197 ( 0 )		<b>Test Name :</b> TPH DRO/ORO BY SW8015C			<b>Matrix:</b> Water	
HS24060201-01	B-Farm LD 18-034HC	03 Jun 2024 11:00		07 Jun 2024 09:00	10 Jun 2024 12:55	10
<b>Batch ID:</b> 213432 ( 0 )		<b>Test Name :</b> TOTAL METALS BY E200.8, REV 5.4, 1994			<b>Matrix:</b> Water	
HS24060201-01	B-Farm LD 18-034HC	03 Jun 2024 11:00		12 Jun 2024 10:00	17 Jun 2024 14:11	50
HS24060201-01	B-Farm LD 18-034HC	03 Jun 2024 11:00		12 Jun 2024 10:00	14 Jun 2024 15:04	5
<b>Batch ID:</b> R468833 ( 0 )		<b>Test Name :</b> TOTAL DISSOLVED SOLIDS BY SM2540C-2011			<b>Matrix:</b> Water	
HS24060201-01	B-Farm LD 18-034HC	03 Jun 2024 11:00			07 Jun 2024 09:30	1
<b>Batch ID:</b> R468937 ( 0 )		<b>Test Name :</b> DISSOLVED GASES BY RSK-175			<b>Matrix:</b> Water	
HS24060201-01	B-Farm LD 18-034HC	03 Jun 2024 11:00			10 Jun 2024 14:05	200
HS24060201-01	B-Farm LD 18-034HC	03 Jun 2024 11:00			10 Jun 2024 11:07	1
<b>Batch ID:</b> R469217 ( 0 )		<b>Test Name :</b> LOW LEVEL VOLATILES BY SW8260C			<b>Matrix:</b> Water	
HS24060201-01	B-Farm LD 18-034HC	03 Jun 2024 11:00			12 Jun 2024 20:09	100
<b>Batch ID:</b> R469246 ( 0 )		<b>Test Name :</b> ANIONS BY E300.0, REV 2.1, 1993			<b>Matrix:</b> Water	
HS24060201-01	B-Farm LD 18-034HC	03 Jun 2024 11:00			12 Jun 2024 11:45	100
HS24060201-01	B-Farm LD 18-034HC	03 Jun 2024 11:00			12 Jun 2024 11:39	10
<b>Batch ID:</b> R469454 ( 0 )		<b>Test Name :</b> ALKALINITY BY -2011			<b>Matrix:</b> Water	
HS24060201-01	B-Farm LD 18-034HC	03 Jun 2024 11:00			14 Jun 2024 10:46	20
<b>Batch ID:</b> R469649 ( 0 )		<b>Test Name :</b> GASOLINE RANGE ORGANICS BY SW8015C			<b>Matrix:</b> Water	
HS24060201-01	B-Farm LD 18-034HC	03 Jun 2024 11:00			17 Jun 2024 13:20	500

**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**WorkOrder:** HS24060201

**QC BATCH REPORT**

Batch ID: 213197 ( 0 )		Instrument: FID-16		Method: TPH DRO/ORO BY SW8015C						
<b>MBLK</b>	Sample ID: <b>MBLK-213197</b>	Units: <b>mg/L</b>		Analysis Date: <b>07-Jun-2024 12:46</b>						
Client ID:	Run ID: <b>FID-16_469162</b>		SeqNo: <b>8065121</b>		PrepDate: <b>07-Jun-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	0.04655	0.0050	0.06	0	77.6	60 - 135				
<b>LCS</b>	Sample ID: <b>LCS-213197</b>	Units: <b>mg/L</b>		Analysis Date: <b>07-Jun-2024 13:15</b>						
Client ID:	Run ID: <b>FID-16_469162</b>		SeqNo: <b>8065122</b>		PrepDate: <b>07-Jun-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)	0.6182	0.050	0.6	0	103	70 - 130				
Surr: 2-Fluorobiphenyl	0.06961	0.0050	0.06	0	116	60 - 135				
<b>LCSD</b>	Sample ID: <b>LCSD-213197</b>	Units: <b>mg/L</b>		Analysis Date: <b>07-Jun-2024 13:44</b>						
Client ID:	Run ID: <b>FID-16_469162</b>		SeqNo: <b>8065123</b>		PrepDate: <b>07-Jun-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)	0.6052	0.050	0.6	0	101	70 - 130	0.6182	2.13	20	
Surr: 2-Fluorobiphenyl	0.06815	0.0050	0.06	0	114	60 - 135	0.06961	2.12	20	

The following samples were analyzed in this batch: HS24060201-01



**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**WorkOrder:** HS24060201

**QC BATCH REPORT**

Batch ID: R468937 ( 0 )		Instrument: FID-4		Method: DISSOLVED GASES BY RSK-175					
<b>MBLK</b>	Sample ID: <b>MBLK-240610</b>	Units: <b>ug/L</b>		Analysis Date: <b>10-Jun-2024 09:01</b>					
Client ID:	Run ID: <b>FID-4_468937</b>	SeqNo: <b>8056734</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-240610</b>	Units: <b>ug/L</b>		Analysis Date: <b>10-Jun-2024 09:33</b>					
Client ID:	Run ID: <b>FID-4_468937</b>	SeqNo: <b>8056735</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	17.67	1.00	18.04	0	98.0	75 - 125			
Methane	9.426	0.500	9.647	0	97.7	75 - 125			
Propane	22.24	1.50	26.46	0	84.0	75 - 125			

<b>LCSD</b>	Sample ID: <b>LCSD-240610</b>	Units: <b>ug/L</b>		Analysis Date: <b>10-Jun-2024 09:47</b>					
Client ID:	Run ID: <b>FID-4_468937</b>	SeqNo: <b>8056736</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	16.91	1.00	18.04	0	93.7	75 - 125	17.67	4.43	30
Methane	9.336	0.500	9.647	0	96.8	75 - 125	9.426	0.957	30
Propane	22.4	1.50	26.46	0	84.6	75 - 125	22.24	0.721	30

The following samples were analyzed in this batch: HS24060201-01

Client: PDC Energy  
 Project: B-Farm LD 18-034HC  
 WorkOrder: HS24060201

## QC BATCH REPORT

Batch ID: R469649 ( 0 )		Instrument: FID-20		Method: GASOLINE RANGE ORGANICS BY SW8015C						
<b>MBLK</b>	Sample ID: MBLK-240617	Units: mg/L		Analysis Date: 17-Jun-2024 10:43						
Client ID:	Run ID: FID-20_469649	SeqNo: 8080837		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	0.08296	0.00500	0.1	0	83.0	70 - 121				
<b>LCS</b>	Sample ID: LCS-240617	Units: mg/L		Analysis Date: 17-Jun-2024 10:16						
Client ID:	Run ID: FID-20_469649	SeqNo: 8080835		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8058	0.0500	1	0	80.6	76 - 124				
Surr: 4-Bromofluorobenzene	0.0892	0.00500	0.1	0	89.2	52 - 138				
<b>LCSD</b>	Sample ID: LCSD-240617	Units: mg/L		Analysis Date: 17-Jun-2024 10:29						
Client ID:	Run ID: FID-20_469649	SeqNo: 8080836		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8097	0.0500	1	0	81.0	76 - 124	0.8058	0.484	20	
Surr: 4-Bromofluorobenzene	0.08858	0.00500	0.1	0	88.6	52 - 138	0.0892	0.7	20	
The following samples were analyzed in this batch: HS24060201-01										

**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**WorkOrder:** HS24060201

**QC BATCH REPORT**

Batch ID: 213432 ( 0 )		Instrument: ICPMS06		Method: TOTAL METALS BY E200.8, REV 5.4, 1994					
<b>MBLK</b>	Sample ID: <b>MBLK-213432</b>	Units: <b>ug/L</b>		Analysis Date: <b>14-Jun-2024 14:25</b>					
Client ID:	Run ID: <b>ICPMS06_469410</b>	SeqNo: <b>8071953</b>		PrepDate: <b>12-Jun-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-213432</b>	Units: <b>ug/L</b>		Analysis Date: <b>14-Jun-2024 14:27</b>					
Client ID:	Run ID: <b>ICPMS06_469410</b>	SeqNo: <b>8071954</b>		PrepDate: <b>12-Jun-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	4811	500	5000	0	96.2	85 - 115			
Magnesium	4992	500	5000	0	99.8	85 - 115			
Potassium	4790	500	5000	0	95.8	85 - 115			
Sodium	5010	200	5000	0	100	85 - 115			

<b>MS</b>	Sample ID: <b>HS24060327-03MS</b>	Units: <b>ug/L</b>		Analysis Date: <b>14-Jun-2024 14:41</b>					
Client ID:	Run ID: <b>ICPMS06_469410</b>	SeqNo: <b>8071960</b>		PrepDate: <b>12-Jun-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	55560	500	5000	54020	30.6	70 - 130			SO
Magnesium	19050	500	5000	15240	76.1	70 - 130			
Potassium	13510	500	5000	9333	83.4	70 - 130			
Sodium	31140	200	5000	28130	60.3	70 - 130			SO

<b>MS</b>	Sample ID: <b>HS24060327-02MS</b>	Units: <b>ug/L</b>		Analysis Date: <b>14-Jun-2024 14:33</b>					
Client ID:	Run ID: <b>ICPMS06_469410</b>	SeqNo: <b>8071956</b>		PrepDate: <b>12-Jun-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	432900	500	5000	469600	-734	70 - 130			SEO
Magnesium	24140	500	5000	21260	57.5	70 - 130			SO
Potassium	15690	500	5000	12240	69.1	70 - 130			S
Sodium	23950	200	5000	20740	64.2	70 - 130			SO

Client:

Project:

WorkOrder:

PDC Energy

B-Farm LD 18-034HC

HS24060201

QC BATCH REPORT

Batch ID: 213432 ( 0 )		Instrument: ICPMS06		Method: TOTAL METALS BY E200.8, REV 5.4, 1994						
MSD	Sample ID: HS24060327-03MSD		Units: ug/L		Analysis Date: 14-Jun-2024 14:43					
Client ID:	Run ID: ICPMS06_469410		SeqNo: 8071961		PrepDate: 12-Jun-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	58930	500	5000	54020	98.1	70 - 130	55560	5.9	20	O
Magnesium	20200	500	5000	15240	99.2	70 - 130	19050	5.89	20	
Potassium	14510	500	5000	9333	104	70 - 130	13510	7.2	20	
Sodium	33100	200	5000	28130	99.5	70 - 130	31140	6.1	20	O

MSD	Sample ID: HS24060327-02MSD		Units: ug/L		Analysis Date: 14-Jun-2024 14:35					
Client ID:	Run ID: ICPMS06_469410		SeqNo: 8071957		PrepDate: 12-Jun-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	461400	500	5000	469600	-165	70 - 130	432900	6.36	20	SEO
Magnesium	25600	500	5000	21260	86.8	70 - 130	24140	5.89	20	O
Potassium	16570	500	5000	12240	86.6	70 - 130	15690	5.43	20	
Sodium	25220	200	5000	20740	89.6	70 - 130	23950	5.15	20	O

The following samples were analyzed in this batch: HS24060201-01

**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**WorkOrder:** HS24060201

**QC BATCH REPORT**

Batch ID: R469217 ( 0 )		Instrument: VOA4		Method: LOW LEVEL VOLATILES BY SW8260C					
<b>MBLK</b>	Sample ID: VBLKW-240612	Units: ug/L		Analysis Date: 12-Jun-2024 11:53					
Client ID:	Run ID: VOA4_469217	SeqNo: 8066322		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	47.59	1.0	50	0	95.2	70 - 123			
Surr: 4-Bromofluorobenzene	49.1	1.0	50	0	98.2	77 - 113			
Surr: Dibromofluoromethane	49.17	1.0	50	0	98.3	73 - 126			
Surr: Toluene-d8	49.81	1.0	50	0	99.6	81 - 120			

<b>LCS</b>	Sample ID: VLCSW-240612	Units: ug/L		Analysis Date: 12-Jun-2024 10:45					
Client ID:	Run ID: VOA4_469217	SeqNo: 8066320		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	19.59	1.0	20	0	98.0	74 - 120			
Ethylbenzene	21.09	1.0	20	0	105	77 - 117			
m,p-Xylene	42.26	2.0	40	0	106	77 - 122			
o-Xylene	20.15	1.0	20	0	101	75 - 119			
Toluene	19.96	1.0	20	0	99.8	77 - 118			
Xylenes, Total	62.41	3.0	60	0	104	75 - 122			
Surr: 1,2-Dichloroethane-d4	47.95	1.0	50	0	95.9	70 - 123			
Surr: 4-Bromofluorobenzene	49.42	1.0	50	0	98.8	77 - 113			
Surr: Dibromofluoromethane	49.1	1.0	50	0	98.2	73 - 126			
Surr: Toluene-d8	50.15	1.0	50	0	100	81 - 120			

Client: PDC Energy  
 Project: B-Farm LD 18-034HC  
 WorkOrder: HS24060201

## QC BATCH REPORT

Batch ID: R469217 ( 0 )		Instrument: VOA4		Method: LOW LEVEL VOLATILES BY SW8260C					
LCSD		Sample ID: VLCSDW-240612		Units: ug/L		Analysis Date: 12-Jun-2024 11:08			
Client ID:		Run ID: VOA4_469217		SeqNo: 8066321		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	19.35	1.0	20	0	96.8	74 - 120	19.59	1.24	20
Ethylbenzene	19.98	1.0	20	0	99.9	77 - 117	21.09	5.37	20
m,p-Xylene	39.94	2.0	40	0	99.9	77 - 122	42.26	5.64	20
o-Xylene	19.29	1.0	20	0	96.4	75 - 119	20.15	4.38	20
Toluene	19.13	1.0	20	0	95.7	77 - 118	19.96	4.23	20
Xylenes, Total	59.23	3.0	60	0	98.7	75 - 122	62.41	5.23	20
Surr: 1,2-Dichloroethane-d4	48.23	1.0	50	0	96.5	70 - 123	47.95	0.58	20
Surr: 4-Bromofluorobenzene	49.36	1.0	50	0	98.7	77 - 113	49.42	0.121	20
Surr: Dibromofluoromethane	49.05	1.0	50	0	98.1	73 - 126	49.1	0.0973	20
Surr: Toluene-d8	49.94	1.0	50	0	99.9	81 - 120	50.15	0.436	20

MS		Sample ID: HS24060244-01MS		Units: ug/L		Analysis Date: 12-Jun-2024 20:31			
Client ID:		Run ID: VOA4_469217		SeqNo: 8067881		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	17.56	1.0	20	0	87.8	70 - 127			
Ethylbenzene	17.74	1.0	20	0	88.7	70 - 124			
m,p-Xylene	34.86	2.0	40	0	87.1	70 - 130			
o-Xylene	17.26	1.0	20	0	86.3	70 - 124			
Toluene	17.46	1.0	20	0	87.3	70 - 123			
Xylenes, Total	52.12	3.0	60	0	86.9	70 - 130			
Surr: 1,2-Dichloroethane-d4	49.33	1.0	50	0	98.7	70 - 126			
Surr: 4-Bromofluorobenzene	50.29	1.0	50	0	101	77 - 113			
Surr: Dibromofluoromethane	50.88	1.0	50	0	102	77 - 123			
Surr: Toluene-d8	49.68	1.0	50	0	99.4	82 - 127			

**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**WorkOrder:** HS24060201

**QC BATCH REPORT**

Batch ID: R469217 ( 0 )		Instrument: VOA4		Method: LOW LEVEL VOLATILES BY SW8260C					
<b>MSD</b>		Sample ID: HS24060244-01MSD		Units: ug/L		Analysis Date: 12-Jun-2024 20:54			
Client ID:		Run ID: VOA4_469217		SeqNo: 8067882		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	17.11	1.0	20	0	85.6	70 - 127	17.56	2.56	20
Ethylbenzene	16.5	1.0	20	0	82.5	70 - 124	17.74	7.27	20
m,p-Xylene	34.3	2.0	40	0	85.8	70 - 130	34.86	1.59	20
o-Xylene	16.92	1.0	20	0	84.6	70 - 124	17.26	2.02	20
Toluene	16.18	1.0	20	0	80.9	70 - 123	17.46	7.62	20
Xylenes, Total	51.22	3.0	60	0	85.4	70 - 130	52.12	1.73	20
Surr: 1,2-Dichloroethane-d4	49.24	1.0	50	0	98.5	70 - 126	49.33	0.176	20
Surr: 4-Bromofluorobenzene	49.94	1.0	50	0	99.9	77 - 113	50.29	0.68	20
Surr: Dibromofluoromethane	51.25	1.0	50	0	103	77 - 123	50.88	0.726	20
Surr: Toluene-d8	48.75	1.0	50	0	97.5	82 - 127	49.68	1.88	20

The following samples were analyzed in this batch: HS24060201-01

**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**WorkOrder:** HS24060201

**QC BATCH REPORT**

Batch ID: R468833 ( 0 )		Instrument: Balance1		Method: TOTAL DISSOLVED SOLIDS BY SM2540C-2011						
MBLK	Sample ID: WMBLK-06072024	Units: mg/L		Analysis Date: 07-Jun-2024 09:30						
Client ID:	Run ID: Balance1_468833	SeqNo: 8054487		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-06072024	Units: mg/L		Analysis Date: 07-Jun-2024 09:30						
Client ID:	Run ID: Balance1_468833	SeqNo: 8054486		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)		918	10.0	1000	0	91.8	85 - 115			

DUP	Sample ID: HS24060367-01 DUP	Units: mg/L		Analysis Date: 07-Jun-2024 09:30						
Client ID:	Run ID: Balance1_468833	SeqNo: 8054476		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)		318	10.0				308	3.19	20	

DUP	Sample ID: HS24060202-01 DUP	Units: mg/L		Analysis Date: 07-Jun-2024 09:30						
Client ID:	Run ID: Balance1_468833	SeqNo: 8054473		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)		706	10.0				710	0.565	20	

The following samples were analyzed in this batch:		HS24060201-01
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**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**WorkOrder:** HS24060201

**QC BATCH REPORT**

Batch ID: R469246 ( 0 )		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993					
<b>MBLK</b>	Sample ID: <b>MBLK</b>	Units: <b>mg/L</b>		Analysis Date: <b>12-Jun-2024 09:41</b>					
Client ID:	Run ID: <b>ICS-Integrion_469246</b>		SeqNo: <b>8067323</b>		PrepDate:		DF: <b>1</b>		
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: <b>LCS</b>	Units: <b>mg/L</b>		Analysis Date: <b>12-Jun-2024 09:53</b>					
Client ID:	Run ID: <b>ICS-Integrion_469246</b>		SeqNo: <b>8067324</b>		PrepDate:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Chloride 21.21 0.500 20 0 106 90 - 110

Sulfate 21.35 0.500 20 0 107 90 - 110

<b>MS</b>	Sample ID: <b>HS24060327-01MS</b>	Units: <b>mg/L</b>		Analysis Date: <b>12-Jun-2024 10:40</b>					
Client ID:	Run ID: <b>ICS-Integrion_469246</b>		SeqNo: <b>8067331</b>		PrepDate:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Chloride 138.8 0.500 10 131.8 70.0 80 - 120 SEO

Sulfate 90.35 0.500 10 86.38 39.7 80 - 120 SO

<b>MS</b>	Sample ID: <b>HS24060309-01MS</b>	Units: <b>mg/L</b>		Analysis Date: <b>12-Jun-2024 10:11</b>					
Client ID:	Run ID: <b>ICS-Integrion_469246</b>		SeqNo: <b>8067326</b>		PrepDate:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Chloride 36.38 0.500 10 26.85 95.3 80 - 120

Sulfate 51.05 0.500 10 43.8 72.6 80 - 120 SO

<b>MSD</b>	Sample ID: <b>HS24060327-01MSD</b>	Units: <b>mg/L</b>		Analysis Date: <b>12-Jun-2024 10:46</b>					
Client ID:	Run ID: <b>ICS-Integrion_469246</b>		SeqNo: <b>8067332</b>		PrepDate:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Chloride 139.6 0.500 10 131.8 78.1 80 - 120 138.8 0.576 20 SEO

Sulfate 90.46 0.500 10 86.38 40.8 80 - 120 90.35 0.122 20 SO

Client:

Project:

WorkOrder:

PDC Energy

B-Farm LD 18-034HC

HS24060201

QC BATCH REPORT

Batch ID: R469246 ( 0 )		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993					
MSD	Sample ID: HS24060309-01MSD	Units: mg/L		Analysis Date: 12-Jun-2024 10:17					
Client ID:	Run ID: ICS-Integrion_469246		SeqNo: 8067327		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	36.78	0.500	10	26.85	99.2	80 - 120	36.38	1.07	20
Sulfate	51.74	0.500	10	43.8	79.5	80 - 120	51.05	1.34	20 SO
The following samples were analyzed in this batch: HS24060201-01									

**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**WorkOrder:** HS24060201

**QC BATCH REPORT**

Batch ID: R469454 ( 0 )		Instrument: Skalar 03		Method: ALKALINITY BY -2011					
<b>MBLK</b>	Sample ID: MBLK-06142024	Units: mg/L		Analysis Date: 14-Jun-2024 10:27					
Client ID:	Run ID: Skalar 03_469454	SeqNo: 8071341		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-06142024	Units: mg/L		Analysis Date: 14-Jun-2024 10:33					
Client ID:	Run ID: Skalar 03_469454	SeqNo: 8071342		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)	966.4	5.00	1000	0	96.6	85 - 115			
Alkalinity, Total (As CaCO3)	967.7	5.00	1000	0	96.8	85 - 115			

<b>LCSD</b>	Sample ID: LCSD-06142024	Units: mg/L		Analysis Date: 14-Jun-2024 10:40					
Client ID:	Run ID: Skalar 03_469454	SeqNo: 8071343		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)	972	5.00	1000	0	97.2	85 - 115	966.4	0.578	20
Alkalinity, Total (As CaCO3)	972.6	5.00	1000	0	97.3	85 - 115	967.7	0.505	20

<b>DUP</b>	Sample ID: HS24060251-02DUP	Units: mg/L		Analysis Date: 14-Jun-2024 12:22					
Client ID:	Run ID: Skalar 03_469454	SeqNo: 8071361		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)	329.4	5.00					337.3	2.37	20
Alkalinity, Carbonate (As CaCO3)	ND	5.00					0	0	20
Alkalinity, Total (As CaCO3)	329.4	5.00					337.3	2.37	20

The following samples were analyzed in this batch: HS24060201-01

**Client:** PDC Energy  
**Project:** B-Farm LD 18-034HC  
**WorkOrder:** HS24060201

**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**

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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: HS24060201

Date/Time Received: 05-Jun-2024 09:35

Client Name: PDC Energy 80203

Received by: Si Ma

Completed By: /S/ Paresh M. Giga

05-Jun-2024 11:48

Reviewed by: /S/ Tyler Monroe

06-Jun-2024 12:23

eSignature

Date/Time

eSignature

Date/Time

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

VOA/TX1005/TX1006 Solids in hermetically sealed vials?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

1 Page(s)

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

COC IDs:none

Samplers name present on COC?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

2.2C/2.3C U/c

IR31

Cooler(s)/Kit(s):

51536

Date/Time sample(s) sent to storage:

6/5/24 12:10

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:

965 E 11th St  
Loveland, CO 80537  
PH: 970-305-1648

## Chain-of-Custody

**HS24060201**

PDC Energy  
B-Farm LD18-034HC

[illegible]

ORIGIN ID:GXVA (970) 305-1648  
KAREN CRAVEN  
ALS  
965 E 11TH ST  
LOVELAND, CO 80537  
UNITED STATES US

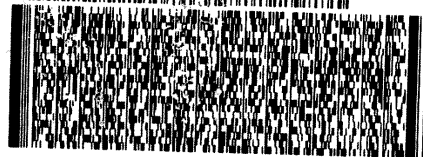
SHIP DATE: 04JUN24  
ACTWT: 51.95 LB  
CAD: 0760438/CAFE3709  
DIMS: 24x14x13 IN  
BILL THIRD PARTY

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

51536.

(231) 630-6666  
PC: 957554812

51536



TRK# 7122 9262 1118  
0201

WED - 05 JUN 10:30A  
PRIORITY OVERNIGHT

NA SGRA

77099  
TX-US IAH

Part # 187077-434 MTW EXP 0322

