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May 10, 2024

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

Work Order: **HS24050011**

Laboratory Results for: **Phelps A-32CHZ**

Dear Jessica Johannsen,

ALS Environmental received 1 sample(s) on May 01, 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: JUMOKE.LAWAL  
Tyler Monroe

Client: PDC Energy  
Project: Phelps A-32CHZ  
Work Order: HS24050011

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS24050011-01	Phelps A-32CHZ	Water		30-Apr-2024 10:30	01-May-2024 09:15	<input type="checkbox"/>

**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**Work Order:** HS24050011

**CASE NARRATIVE**

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**GC Semivolatiles by Method RSK-175****Batch ID: R466044**

- 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: 211337****Sample ID: Phelps A-32CHZ (HS24050011-01)**

- 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: R466048****Sample ID: Phelps A-32CHZ (HS24050011-01)**

- Lowest possible dilution due to sample matrix.

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**GCMS Volatiles by Method SW8260****Batch ID: R466299****Sample ID: Phelps A-32CHZ (HS24050011-01)**

- Lowest practical dilution due to sample matrix.

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**Metals by Method E200.8****Batch ID: 211458**

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

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**WetChemistry by Method SM2320B****Batch ID: R466090**

- 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: R465775****Sample ID: HS24041702-10MS**

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

**Sample ID: Phelps A-32CHZ (HS24050011-01)**

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

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**WetChemistry by Method M2540C****Batch ID: R465760**

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

Client: PDC Energy  
 Project: Phelps A-32CHZ  
 Sample ID: Phelps A-32CHZ  
 Collection Date: 30-Apr-2024 10:30

**ANALYTICAL REPORT**

WorkOrder:HS24050011  
 Lab ID:HS24050011-01  
 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	09-May-2024 04:10
Ethylbenzene	ND		100	ug/L	100	09-May-2024 04:10
m,p-Xylene	ND		200	ug/L	100	09-May-2024 04:10
o-Xylene	ND		100	ug/L	100	09-May-2024 04:10
Toluene	ND		100	ug/L	100	09-May-2024 04:10
Xylenes, Total	ND		300	ug/L	100	09-May-2024 04:10
Surr: 1,2-Dichloroethane-d4	84.1		70-126	%REC	100	09-May-2024 04:10
Surr: 4-Bromofluorobenzene	102		77-113	%REC	100	09-May-2024 04:10
Surr: Dibromofluoromethane	93.4		77-123	%REC	100	09-May-2024 04:10
Surr: Toluene-d8	97.4		82-127	%REC	100	09-May-2024 04:10
<b>GASOLINE RANGE ORGANICS BY SW8015C</b>		<b>Method:SW8015</b>		Analyst: TS		
Gasoline Range Organics	ND		25.0	mg/L	500	04-May-2024 00:33
Surr: 4-Bromofluorobenzene	83.7		70-123	%REC	500	04-May-2024 00:33
<b>DISSOLVED GASES BY RSK-175</b>		<b>Method:RSK-175</b>		Analyst: E.H.		
Ethane	476		10.0	ug/L	10	06-May-2024 16:21
Methane	1,210		50.0	ug/L	100	06-May-2024 15:51
Propane	247		10.0	ug/L	10	06-May-2024 16:21
<b>TPH DRO/ORO BY SW8015C</b>		<b>Method:SW8015M</b>		Prep:SW3511 / 01-May-2024 Analyst: SAM		
TPH (Diesel Range)	17		0.53	mg/L	10	07-May-2024 10:09
Surr: 2-Fluorobiphenyl	0	JS	60-135	%REC	10	07-May-2024 10:09
<b>TOTAL METALS BY E200.8, REV 5.4, 1994</b>		<b>Method:E200.8</b>		Prep:E200.8 / 03-May-2024 Analyst: MSC		
Calcium	10.9		1.00	mg/L	2	08-May-2024 23:03
Magnesium	7.27		1.00	mg/L	2	08-May-2024 23:03
Potassium	45.5		1.00	mg/L	2	08-May-2024 23:03
Sodium	1,840		20.0	mg/L	100	08-May-2024 16:46
<b>ANIONS BY E300.0, REV 2.1, 1993</b>		<b>Method:E300</b>		Analyst: TH		
Chloride	1,670		25.0	mg/L	50	02-May-2024 17:38
Sulfate	ND		2.50	mg/L	5	02-May-2024 17:32
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>		Analyst: MH		
Total Dissolved Solids (Residue, Filterable)	4,800		10.0	mg/L	1	02-May-2024 09:00
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>		Analyst: AR		
Alkalinity, Bicarbonate (As CaCO3)	1,520		25.0	mg/L	5	07-May-2024 10:42
Alkalinity, Carbonate (As CaCO3)	142		25.0	mg/L	5	07-May-2024 10:42
Alkalinity, Total (As CaCO3)	1,660		25.0	mg/L	5	07-May-2024 10:42

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

Weight / Prep Log

Client: PDC Energy  
Project: Phelps A-32CHZ  
WorkOrder: HS24050011

Batch ID: 211337	Start Date: 01 May 2024 18:00	End Date: 01 May 2024 18:00
Method: SW3511	Prep Code: 3511_DRO	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS24050011-01		31.28 (mL)	2 (mL)	0.06394	40 mL Amber

Batch ID: 211458	Start Date: 03 May 2024 12:00	End Date: 03 May 2024 12:00
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	
HS24050011-01		10 (mL)	10 (mL)	1	250 mL plastic, HNO3 to pH <2

**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**WorkOrder:** HS24050011

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> 211337 ( 0 )		<b>Test Name :</b> TPH DRO/ORO BY SW8015C			<b>Matrix:</b> Water	
HS24050011-01	Phelps A-32CHZ	30 Apr 2024 10:30		01 May 2024 18:00	07 May 2024 10:09	10
<b>Batch ID:</b> 211458 ( 0 )		<b>Test Name :</b> TOTAL METALS BY E200.8, REV 5.4, 1994			<b>Matrix:</b> Water	
HS24050011-01	Phelps A-32CHZ	30 Apr 2024 10:30		03 May 2024 12:00	08 May 2024 23:03	2
HS24050011-01	Phelps A-32CHZ	30 Apr 2024 10:30		03 May 2024 12:00	08 May 2024 16:46	100
<b>Batch ID:</b> R465760 ( 0 )		<b>Test Name :</b> TOTAL DISSOLVED SOLIDS BY SM2540C-2011			<b>Matrix:</b> Water	
HS24050011-01	Phelps A-32CHZ	30 Apr 2024 10:30			02 May 2024 09:00	1
<b>Batch ID:</b> R465775 ( 0 )		<b>Test Name :</b> ANIONS BY E300.0, REV 2.1, 1993			<b>Matrix:</b> Water	
HS24050011-01	Phelps A-32CHZ	30 Apr 2024 10:30			02 May 2024 17:38	50
HS24050011-01	Phelps A-32CHZ	30 Apr 2024 10:30			02 May 2024 17:32	5
<b>Batch ID:</b> R466044 ( 0 )		<b>Test Name :</b> DISSOLVED GASES BY RSK-175			<b>Matrix:</b> Water	
HS24050011-01	Phelps A-32CHZ	30 Apr 2024 10:30			06 May 2024 16:21	10
HS24050011-01	Phelps A-32CHZ	30 Apr 2024 10:30			06 May 2024 15:51	100
<b>Batch ID:</b> R466048 ( 0 )		<b>Test Name :</b> GASOLINE RANGE ORGANICS BY SW8015C			<b>Matrix:</b> Water	
HS24050011-01	Phelps A-32CHZ	30 Apr 2024 10:30			04 May 2024 00:33	500
<b>Batch ID:</b> R466090 ( 0 )		<b>Test Name :</b> ALKALINITY BY -2011			<b>Matrix:</b> Water	
HS24050011-01	Phelps A-32CHZ	30 Apr 2024 10:30			07 May 2024 10:42	5
<b>Batch ID:</b> R466299 ( 0 )		<b>Test Name :</b> LOW LEVEL VOLATILES BY SW8260C			<b>Matrix:</b> Water	
HS24050011-01	Phelps A-32CHZ	30 Apr 2024 10:30			09 May 2024 04:10	100

**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**WorkOrder:** HS24050011

**QC BATCH REPORT**

Batch ID: 211337 ( 0 )		Instrument: FID-16		Method: TPH DRO/ORO BY SW8015C						
<b>MBLK</b>	Sample ID: <b>MBLK-211337</b>	Units: <b>mg/L</b>		Analysis Date: <b>06-May-2024 16:11</b>						
Client ID:	Run ID: <b>FID-16_466174</b>		SeqNo: <b>7998075</b>		PrepDate: <b>01-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	0.06418	0.0050	0.06	0	107	60 - 135				
<b>LCS</b>	Sample ID: <b>LCS-211337</b>	Units: <b>mg/L</b>		Analysis Date: <b>06-May-2024 16:41</b>						
Client ID:	Run ID: <b>FID-16_466174</b>		SeqNo: <b>7998076</b>		PrepDate: <b>01-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)	0.4939	0.050	0.6	0	82.3	70 - 130				
Surr: 2-Fluorobiphenyl	0.05498	0.0050	0.06	0	91.6	60 - 135				
<b>LCSD</b>	Sample ID: <b>LCSD-211337</b>	Units: <b>mg/L</b>		Analysis Date: <b>06-May-2024 17:10</b>						
Client ID:	Run ID: <b>FID-16_466174</b>		SeqNo: <b>7998077</b>		PrepDate: <b>01-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)	0.4936	0.050	0.6	0	82.3	70 - 130	0.4939	0.0565	20	
Surr: 2-Fluorobiphenyl	0.05147	0.0050	0.06	0	85.8	60 - 135	0.05498	6.59	20	
The following samples were analyzed in this batch: HS24050011-01										

**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**WorkOrder:** HS24050011

**QC BATCH REPORT**

Batch ID: R466044 ( 0 )		Instrument: FID-4		Method: DISSOLVED GASES BY RSK-175					
<b>MBLK</b>	Sample ID: <b>MBLK-240410</b>	Units: <b>ug/L</b>		Analysis Date: <b>06-May-2024 12:25</b>					
Client ID:	Run ID: <b>FID-4_466044</b>		SeqNo: <b>7995324</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-240410</b>	Units: <b>ug/L</b>		Analysis Date: <b>06-May-2024 12:40</b>					
Client ID:	Run ID: <b>FID-4_466044</b>		SeqNo: <b>7995325</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	16.69	1.00	18.04	0	92.5	75 - 125			
Methane	9.059	0.500	9.647	0	93.9	75 - 125			
Propane	25.39	1.50	26.46	0	95.9	75 - 125			

<b>LCSD</b>	Sample ID: <b>LCSD-240410</b>	Units: <b>ug/L</b>		Analysis Date: <b>06-May-2024 12:56</b>					
Client ID:	Run ID: <b>FID-4_466044</b>		SeqNo: <b>7995326</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	1.00	18.04	0	94.2	75 - 125	16.69	1.83	30
Methane	8.578	0.500	9.647	0	88.9	75 - 125	9.059	5.45	30
Propane	25.24	1.50	26.46	0	95.4	75 - 125	25.39	0.576	30

The following samples were analyzed in this batch: HS24050011-01



**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**WorkOrder:** HS24050011

**QC BATCH REPORT**

Batch ID: R466048 ( 0 )		Instrument: FID-20		Method: GASOLINE RANGE ORGANICS BY SW8015C						
<b>MBLK</b>	Sample ID: <b>MBLK-240503</b>	Units: <b>mg/L</b>		Analysis Date: <b>03-May-2024 21:12</b>						
Client ID:	Run ID: <b>FID-20_466048</b>	SeqNo: <b>7995403</b>		PrepDate:		DF: <b>1</b>				
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	0.07889	0.00500	0.1	0	78.9	70 - 121				
<b>LCS</b>	Sample ID: <b>LCS-240503</b>	Units: <b>mg/L</b>		Analysis Date: <b>03-May-2024 20:44</b>						
Client ID:	Run ID: <b>FID-20_466048</b>	SeqNo: <b>7995401</b>		PrepDate:		DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.024	0.0500	1	0	102	76 - 124				
Surr: 4-Bromofluorobenzene	0.08436	0.00500	0.1	0	84.4	52 - 138				
<b>LCSD</b>	Sample ID: <b>LCSD-240503</b>	Units: <b>mg/L</b>		Analysis Date: <b>03-May-2024 20:58</b>						
Client ID:	Run ID: <b>FID-20_466048</b>	SeqNo: <b>7995402</b>		PrepDate:		DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.042	0.0500	1	0	104	76 - 124	1.024	1.71	20	
Surr: 4-Bromofluorobenzene	0.0812	0.00500	0.1	0	81.2	52 - 138	0.08436	3.81	20	
The following samples were analyzed in this batch: HS24050011-01										

**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**WorkOrder:** HS24050011

**QC BATCH REPORT**

Batch ID: 211458 ( 0 )		Instrument: ICPMS05		Method: TOTAL METALS BY E200.8, REV 5.4, 1994					
<b>MBLK</b>	Sample ID: <b>MBLK-211458</b>	Units: <b>ug/L</b>		Analysis Date: <b>08-May-2024 15:13</b>					
Client ID:	Run ID: <b>ICPMS05_466205</b>	SeqNo: <b>7999247</b>		PrepDate: <b>03-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-211458</b>	Units: <b>ug/L</b>		Analysis Date: <b>08-May-2024 15:15</b>					
Client ID:	Run ID: <b>ICPMS05_466205</b>	SeqNo: <b>7999248</b>		PrepDate: <b>03-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	4540	500	5000	0	90.8	85 - 115			
Magnesium	4663	500	5000	0	93.3	85 - 115			
Potassium	4475	500	5000	0	89.5	85 - 115			
Sodium	4641	200	5000	0	92.8	85 - 115			

<b>MS</b>	Sample ID: <b>HS24050129-01MS</b>	Units: <b>ug/L</b>		Analysis Date: <b>08-May-2024 17:05</b>					
Client ID:	Run ID: <b>ICPMS05_466205</b>	SeqNo: <b>7999576</b>		PrepDate: <b>03-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	17450	500	5000	13080	87.4	70 - 130			
Magnesium	10270	500	5000	5731	90.8	70 - 130			
Potassium	7526	500	5000	2976	91.0	70 - 130			
Sodium	17760	200	5000	13510	85.0	70 - 130			

<b>MS</b>	Sample ID: <b>HS24050123-02MS</b>	Units: <b>ug/L</b>		Analysis Date: <b>08-May-2024 16:58</b>					
Client ID:	Run ID: <b>ICPMS05_466205</b>	SeqNo: <b>7999573</b>		PrepDate: <b>03-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	14700	500	5000	10430	85.4	70 - 130			
Magnesium	9105	500	5000	4618	89.7	70 - 130			
Potassium	8050	500	5000	3735	86.3	70 - 130			
Sodium	14820	200	5000	10860	79.2	70 - 130			

Client:

Project:

WorkOrder:

PDC Energy

Phelps A-32CHZ

HS24050011

QC BATCH REPORT

Batch ID: 211458 ( 0 )		Instrument: ICPMS05		Method: TOTAL METALS BY E200.8, REV 5.4, 1994					
MSD	Sample ID: HS24050129-01MSD	Units: ug/L		Analysis Date: 08-May-2024 17:07					
Client ID:	Run ID: ICPMS05_466205		SeqNo: 7999577		PrepDate: 03-May-2024		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	17020	500	5000	13080	78.8	70 - 130	17450	2.5	20
Magnesium	9982	500	5000	5731	85.0	70 - 130	10270	2.84	20
Potassium	7308	500	5000	2976	86.6	70 - 130	7526	2.95	20
Sodium	17420	200	5000	13510	78.3	70 - 130	17760	1.91	20

MSD	Sample ID: HS24050123-02MSD	Units: ug/L		Analysis Date: 08-May-2024 17:00					
Client ID:	Run ID: ICPMS05_466205		SeqNo: 7999574		PrepDate: 03-May-2024		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	14690	500	5000	10430	85.2	70 - 130	14700	0.0841	20
Magnesium	9172	500	5000	4618	91.1	70 - 130	9105	0.734	20
Potassium	8144	500	5000	3735	88.2	70 - 130	8050	1.16	20
Sodium	15060	200	5000	10860	84.0	70 - 130	14820	1.61	20

The following samples were analyzed in this batch: HS24050011-01

Client: PDC Energy  
 Project: Phelps A-32CHZ  
 WorkOrder: HS24050011

## QC BATCH REPORT

Batch ID: R466299 ( 0 )		Instrument: VOA6		Method: LOW LEVEL VOLATILES BY SW8260C					
<b>MBLK</b>		Sample ID: VBLKW-240508	Units: ug/L		Analysis Date: 08-May-2024 21:18				
Client ID:		Run ID: VOA6_466299		SeqNo: 8000736		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	41.2	1.0	50	0	82.4	70 - 123			
Surr: 4-Bromofluorobenzene	50.1	1.0	50	0	100	77 - 113			
Surr: Dibromofluoromethane	46.18	1.0	50	0	92.4	73 - 126			
Surr: Toluene-d8	47.79	1.0	50	0	95.6	81 - 120			

<b>LCS</b>		Sample ID: VLCSW-240508	Units: ug/L		Analysis Date: 08-May-2024 20:14				
Client ID:		Run ID: VOA6_466299		SeqNo: 8000734		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	20.76	1.0	20	0	104	74 - 120			
Ethylbenzene	20.15	1.0	20	0	101	77 - 117			
m,p-Xylene	41.42	2.0	40	0	104	77 - 122			
o-Xylene	21.07	1.0	20	0	105	75 - 119			
Toluene	19.47	1.0	20	0	97.4	77 - 118			
Xylenes, Total	62.49	3.0	60	0	104	75 - 122			
Surr: 1,2-Dichloroethane-d4	56.67	1.0	50	0	113	70 - 123			
Surr: 4-Bromofluorobenzene	51.03	1.0	50	0	102	77 - 113			
Surr: Dibromofluoromethane	53.04	1.0	50	0	106	73 - 126			
Surr: Toluene-d8	48.23	1.0	50	0	96.5	81 - 120			

**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**WorkOrder:** HS24050011

**QC BATCH REPORT**

Batch ID: R466299 ( 0 )		Instrument: VOA6		Method: LOW LEVEL VOLATILES BY SW8260C					
<b>LCSD</b>		Sample ID: <b>VLCS DW-240508</b>		Units: <b>ug/L</b>		Analysis Date: <b>08-May-2024 20:35</b>			
Client ID:		Run ID: <b>VOA6_466299</b>		SeqNo: <b>8000735</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	19.42	1.0	20	0	97.1	74 - 120	20.76	6.66	20
Ethylbenzene	18.44	1.0	20	0	92.2	77 - 117	20.15	8.84	20
m,p-Xylene	37	2.0	40	0	92.5	77 - 122	41.42	11.3	20
o-Xylene	18.86	1.0	20	0	94.3	75 - 119	21.07	11.1	20
Toluene	17.88	1.0	20	0	89.4	77 - 118	19.47	8.5	20
Xylenes, Total	55.86	3.0	60	0	93.1	75 - 122	62.49	11.2	20
Surr: 1,2-Dichloroethane-d4	56.64	1.0	50	0	113	70 - 123	56.67	0.051	20
Surr: 4-Bromofluorobenzene	50.74	1.0	50	0	101	77 - 113	51.03	0.571	20
Surr: Dibromofluoromethane	50.35	1.0	50	0	101	73 - 126	53.04	5.2	20
Surr: Toluene-d8	47.84	1.0	50	0	95.7	81 - 120	48.23	0.814	20

<b>MS</b>		Sample ID: <b>HS24050169-09MS</b>		Units: <b>ug/L</b>		Analysis Date: <b>09-May-2024 04:53</b>			
Client ID:		Run ID: <b>VOA6_466299</b>		SeqNo: <b>8000757</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	18.44	1.0	20	0	92.2	70 - 127			
Ethylbenzene	17.7	1.0	20	0	88.5	70 - 124			
m,p-Xylene	35.53	2.0	40	0	88.8	70 - 130			
o-Xylene	17.97	1.0	20	0	89.8	70 - 124			
Toluene	16.9	1.0	20	0	84.5	70 - 123			
Xylenes, Total	53.5	3.0	60	0	89.2	70 - 130			
Surr: 1,2-Dichloroethane-d4	56.17	1.0	50	0	112	70 - 126			
Surr: 4-Bromofluorobenzene	52.08	1.0	50	0	104	77 - 113			
Surr: Dibromofluoromethane	51.71	1.0	50	0	103	77 - 123			
Surr: Toluene-d8	47.5	1.0	50	0	95.0	82 - 127			

**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**WorkOrder:** HS24050011

**QC BATCH REPORT**

Batch ID: R466299 ( 0 )		Instrument: VOA6		Method: LOW LEVEL VOLATILES BY SW8260C						
<b>MSD</b>		Sample ID: HS24050169-09MSD		Units: ug/L		Analysis Date: 09-May-2024 05:15				
Client ID:		Run ID: VOA6_466299		SeqNo: 8000758		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.4	1.0	20	0	87.0	70 - 127	18.44	5.84	20	
Ethylbenzene	16.49	1.0	20	0	82.5	70 - 124	17.7	7.02	20	
m,p-Xylene	33.29	2.0	40	0	83.2	70 - 130	35.53	6.52	20	
o-Xylene	16.9	1.0	20	0	84.5	70 - 124	17.97	6.14	20	
Toluene	16.24	1.0	20	0	81.2	70 - 123	16.9	4.01	20	
Xylenes, Total	50.19	3.0	60	0	83.6	70 - 130	53.5	6.39	20	
Surr: 1,2-Dichloroethane-d4	55.73	1.0	50	0	111	70 - 126	56.17	0.797	20	
Surr: 4-Bromofluorobenzene	51.23	1.0	50	0	102	77 - 113	52.08	1.64	20	
Surr: Dibromofluoromethane	51.2	1.0	50	0	102	77 - 123	51.71	1	20	
Surr: Toluene-d8	47.57	1.0	50	0	95.1	82 - 127	47.5	0.15	20	

The following samples were analyzed in this batch: HS24050011-01

**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**WorkOrder:** HS24050011

**QC BATCH REPORT**

Batch ID: R465760 ( 0 )		Instrument: Balance1		Method: TOTAL DISSOLVED SOLIDS BY SM2540C-2011						
MBLK	Sample ID: WMBLK-05022024	Units: mg/L		Analysis Date: 02-May-2024 09:00						
Client ID:	Run ID: Balance1_465760	SeqNo: 7988935		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-05022024	Units: mg/L		Analysis Date: 02-May-2024 09:00						
Client ID:	Run ID: Balance1_465760	SeqNo: 7988934		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)		924	10.0	1000	0	92.4	85 - 115			
DUP	Sample ID: HS24050049-02 DUP	Units: mg/L		Analysis Date: 02-May-2024 09:00						
Client ID:	Run ID: Balance1_465760	SeqNo: 7988926		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)		732	10.0				732	0	20	
DUP	Sample ID: HS24050022-01 DUP	Units: mg/L		Analysis Date: 02-May-2024 09:00						
Client ID:	Run ID: Balance1_465760	SeqNo: 7988921		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)		350	10.0				350	0	20	
The following samples were analyzed in this batch: HS24050011-01										

**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**WorkOrder:** HS24050011

**QC BATCH REPORT**

Batch ID: R465775 ( 0 )		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993					
<b>MBLK</b>	Sample ID: MBLK	Units: mg/L		Analysis Date: 02-May-2024 13:49					
Client ID:	Run ID: ICS-Integrion_465775		SeqNo: 7989420		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: 02-May-2024 13:55					
Client ID:	Run ID: ICS-Integrion_465775		SeqNo: 7989421		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	19.8	0.500	20	0	99.0	90 - 110			
Sulfate	21.44	0.500	20	0	107	90 - 110			

<b>MS</b>	Sample ID: HS24041702-10MS	Units: mg/L		Analysis Date: 02-May-2024 17:09					
Client ID:	Run ID: ICS-Integrion_465775		SeqNo: 7989446		PrepDate:		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	7502	50.0	1000	6773	72.9	80 - 120			SO
Sulfate	1526	50.0	1000	484	104	80 - 120			

<b>MS</b>	Sample ID: HS24041702-01MS	Units: mg/L		Analysis Date: 02-May-2024 15:34					
Client ID:	Run ID: ICS-Integrion_465775		SeqNo: 7989433		PrepDate:		DF: 250		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	10990	125	2500	8740	90.0	80 - 120			
Sulfate	4986	125	2500	2599	95.5	80 - 120			

<b>MSD</b>	Sample ID: HS24041702-10MSD	Units: mg/L		Analysis Date: 02-May-2024 17:15					
Client ID:	Run ID: ICS-Integrion_465775		SeqNo: 7989447		PrepDate:		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	7454	50.0	1000	6773	68.0	80 - 120	7502	0.65	20 SO
Sulfate	1527	50.0	1000	484	104	80 - 120	1526	0.104	20



Client:

Project:

WorkOrder:

PDC Energy

Phelps A-32CHZ

HS24050011

QC BATCH REPORT

Batch ID: R465775 ( 0 )		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993					
MSD	Sample ID: HS24041702-01MSD	Units: mg/L		Analysis Date: 02-May-2024 15:40					
Client ID:	Run ID: ICS-Integrion_465775		SeqNo: 7989434		PrepDate:		DF: 250		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	10890	125	2500	8740	85.9	80 - 120	10990	0.93	20
Sulfate	4951	125	2500	2599	94.1	80 - 120	4986	0.709	20
The following samples were analyzed in this batch: HS24050011-01									

**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**WorkOrder:** HS24050011

**QC BATCH REPORT**

Batch ID: R466090 ( 0 )		Instrument: Skalar 03		Method: ALKALINITY BY -2011					
<b>MBLK</b>	Sample ID: MBLK-05072024	Units: mg/L		Analysis Date: 07-May-2024 07:51					
Client ID:	Run ID: Skalar 03_466090	SeqNo: 7996253		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-05072024	Units: mg/L		Analysis Date: 07-May-2024 07:57					
Client ID:	Run ID: Skalar 03_466090	SeqNo: 7996254		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)	965.6	5.00	1000	0	96.6	85 - 115			
Alkalinity, Total (As CaCO3)	970.9	5.00	1000	0	97.1	85 - 115			

<b>LCSD</b>	Sample ID: LCSD-05072024	Units: mg/L		Analysis Date: 07-May-2024 08:03					
Client ID:	Run ID: Skalar 03_466090	SeqNo: 7996255		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)	958.8	5.00	1000	0	95.9	85 - 115	965.6	0.707	20
Alkalinity, Total (As CaCO3)	963.7	5.00	1000	0	96.4	85 - 115	970.9	0.744	20

<b>DUP</b>	Sample ID: HS24041953-01DUP	Units: mg/L		Analysis Date: 07-May-2024 08:15					
Client ID:	Run ID: Skalar 03_466090	SeqNo: 7996257		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)	292.1	5.00					283.8	2.88	20
Alkalinity, Carbonate (As CaCO3)	ND	5.00					0	0	20
Alkalinity, Total (As CaCO3)	292.1	5.00					283.8	2.88	20

The following samples were analyzed in this batch: HS24050011-01

**Client:** PDC Energy  
**Project:** Phelps A-32CHZ  
**WorkOrder:** HS24050011

**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
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
Texas	T104704231 TX-C24-00130	30-Apr-2025
Utah	TX026932023-14	31-Jul-2024

## Sample Receipt Checklist

Work Order ID: HS24050011

Date/Time Received: 01-May-2024 09:15

Client Name: PDC Energy 80203

Received by: Jacob Coronado

Completed By: <u>/S/ Jacob Coronado</u>	01-May-2024 15:31	Reviewed by: <u>/S/ Tyler Monroe</u>	01-May-2024 15:45
eSignature	Date/Time	eSignature	Date/Time

Matrices: WCarrier name: FedEx

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"/>	
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):

2.8uc/2.9c | ir31

Cooler(s)/Kit(s):

41924

Date/Time sample(s) sent to storage:

05/01/2024 1400

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

**HS24050011**

PDC Energy  
Pheips A-32CHZ



1

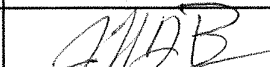


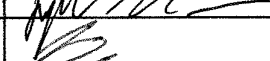
PROJECT NAME		PROJECT No.		COMPANY NAME		SEND REPORT TO		ADDRESS		CITY / STATE / ZIP		PHONE		FAX		E-MAIL		SAMPLER		FACILITY ID		EDD FORMAT		PURCHASE ORDER		BILL TO COMPANY		INVOICE ATTN TO		ADDRESS		CITY / STATE / ZIP		PHONE		FAX		E-MAIL	
Phelps A-32CHZ		09F2073152		PDC Energy		Jessiac Johannsen,Cassie Gonzalez, Raul Sanchez, Evan Varnas		1775 Sherman ST, Suite 3000		Denver, CO 80203		303-860-5815				Jessica.Johannsen@chevron.com Cassie.Gonzales@chevron.com Raul.Sanchez@chevron.com Evan.Varnas @chevron.com		123-37682		ECMC EDD, LTE		N/A		PDC Energy		Christopher Schelich		1775 Sherman Street, Suite 3000		Denver, Colorado		970-415-1881				Christopher.Schelich@pdce.com			
Phelps A-32CHZ		09F2073152		PDC Energy		Jessiac Johannsen,Cassie Gonzalez, Raul Sanchez, Evan Varnas		1775 Sherman ST, Suite 3000		Denver, CO 80203		303-860-5815				Jessica.Johannsen@chevron.com Cassie.Gonzales@chevron.com Raul.Sanchez@chevron.com Evan.Varnas @chevron.com		123-37682		ECMC EDD, LTE		N/A		PDC Energy		Christopher Schelich		1775 Sherman Street, Suite 3000		Denver, Colorado		970-415-1881				Christopher.Schelich@pdce.com			

\*Time Zone: MST

Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

**For metals or anions, please detail analytes below.**

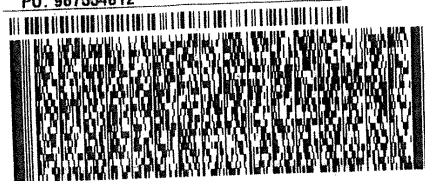
Comments:		Cations/Anions:	QC PACKAGE (check below)	
Calcium, Chloride, Magnesium, Potassium, Sodium, Sulfate* <b>Samples analyzed per</b> <b>ECMC Bradenhead Sampling Program</b> If bubbles are present in voas, please proceed with analysis			X	LEVEL II (Standard QC)
				LEVEL III (Std QC + forms)
				LEVEL IV (Std QC + forms + raw data)
<b>Preservative Key:</b> 1-HCl   2-HNO3   3-H2SO4   4-NaOH   5-NaHSO4   7-Other   8-4 degrees C   9-5035				

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Jeff Braden	4/30/2024	1250
RECEIVED BY		Tyler Monroe	4/30/24	1252
RELINQUISHED BY		Tyler Monroe	4/30/24	1600
RECEIVED BY		Jacob Coronado	5/1/24	0915
RELINQUISHED BY				
RECEIVED BY				

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

SHIP DATE: 30APR24  
ACTWGT: 42.80 LB  
CAD: 0760439/CAFE3709  
DIMS: 23x14x13 IN  
BILL THIRD PARTY

TO **SAMPLE RECEIVING**  
**ALS HOUSTON**  
**10450 STANCLIFF RD**  
**SUITE 210**  
**HOUSTON TX 77099**  
(281) 630-6668  
PO: 967554812



**FedEx**  
Express



TRK# 7122 9261 9910  
0201

**WED - 01 MAY 10:30A**  
**PRIORITY OVERNIGHT**

**NA SGRA**

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



Flat # 157077-434 MTW EXP 0622