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

December 04, 2023

Jenifer Hakkarinen  
PDC Energy  
1775 Sherman Street  
Suite 3000  
Denver, CO 80203

Work Order: **HS23111421**

Laboratory Results for: **Schank J 35-22**

Dear Jenifer Hakkarinen,

ALS Environmental received 1 sample(s) on Nov 18, 2023 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: Schank J 35-22  
Work Order: HS23111421

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23111421-01	Schank J 35-22	Water		17-Nov-2023 13:50	18-Nov-2023 08:40	<input type="checkbox"/>

**Client:** PDC Energy  
**Project:** Schank J 35-22  
**Work Order:** HS23111421

**CASE NARRATIVE**

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**GC Semivolatiles by Method RSK-175****Batch ID: R452727**

- 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: 203895**

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

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**GC Volatiles by Method SW8015****Batch ID: R452726**

- 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: R452615****Sample ID: Schank J 35-22 (HS23111421-01)**

- Lowest possible dilution due to sample matrix.

**Sample ID: HS23111272-04MS**

- MS and MSD are for an unrelated sample

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**Metals by Method E200.8****Batch ID: 203972****Sample ID: HS23111425-01MS**

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

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**WetChemistry by Method E300****Batch ID: R453005****Sample ID: HS23111767-01MS**

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

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**WetChemistry by Method SM2320B****Batch ID: R452703**

- 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: R452654**

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

Client: PDC Energy  
 Project: Schank J 35-22  
 Sample ID: Schank J 35-22  
 Collection Date: 17-Nov-2023 13:50

**ANALYTICAL REPORT**

WorkOrder:HS23111421  
 Lab ID:HS23111421-01  
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: TS		
<b>Benzene</b>	<b>6,300</b>		<b>500</b>	<b>ug/L</b>	500	22-Nov-2023 16:55
Ethylbenzene	ND		500	ug/L	500	22-Nov-2023 16:55
<b>m,p-Xylene</b>	<b>2,300</b>		<b>1000</b>	<b>ug/L</b>	500	22-Nov-2023 16:55
o-Xylene	ND		500	ug/L	500	22-Nov-2023 16:55
<b>Toluene</b>	<b>9,600</b>		<b>500</b>	<b>ug/L</b>	500	22-Nov-2023 16:55
<b>Xylenes, Total</b>	<b>2,600</b>		<b>500</b>	<b>ug/L</b>	500	22-Nov-2023 16:55
Surr: 1,2-Dichloroethane-d4	86.8		70-126	%REC	500	22-Nov-2023 16:55
Surr: 4-Bromofluorobenzene	86.7		77-113	%REC	500	22-Nov-2023 16:55
Surr: Dibromofluoromethane	88.4		77-123	%REC	500	22-Nov-2023 16:55
Surr: Toluene-d8	101		82-127	%REC	500	22-Nov-2023 16:55
<b>GASOLINE RANGE ORGANICS BY SW8015C</b>		<b>Method:SW8015</b>		Analyst: TS		
<b>Gasoline Range Organics</b>	<b>184</b>		<b>25.0</b>	<b>mg/L</b>	500	27-Nov-2023 17:54
Surr: 4-Bromofluorobenzene	85.3		70-123	%REC	500	27-Nov-2023 17:54
<b>DISSOLVED GASES BY RSK-175</b>		<b>Method:RSK-175</b>		Analyst: E.H.		
<b>Ethane</b>	<b>1,610</b>		<b>500</b>	<b>ug/L</b>	500	27-Nov-2023 12:18
<b>Methane</b>	<b>7,710</b>		<b>250</b>	<b>ug/L</b>	500	27-Nov-2023 12:18
<b>Propane</b>	<b>1,840</b>		<b>500</b>	<b>ug/L</b>	500	27-Nov-2023 12:18
<b>TPH DRO/ORO BY SW8015C</b>		<b>Method:SW8015M</b>		Prep:SW3511 / 22-Nov-2023 Analyst: SAM		
<b>TPH (Diesel Range)</b>	<b>0.64</b>		<b>0.050</b>	<b>mg/L</b>	1	03-Dec-2023 17:34
Surr: 2-Fluorobiphenyl	79.3		60-135	%REC	1	03-Dec-2023 17:34
<b>TOTAL METALS BY E200.8, REV 5.4, 1994</b>		<b>Method:E200.8</b>		Prep:E200.8 / 30-Nov-2023 Analyst: MSC		
<b>Calcium</b>	<b>4.62</b>		<b>2.50</b>	<b>mg/L</b>	5	01-Dec-2023 23:41
<b>Magnesium</b>	<b>0.745</b>		<b>0.500</b>	<b>mg/L</b>	1	04-Dec-2023 11:36
<b>Potassium</b>	<b>1.74</b>		<b>0.500</b>	<b>mg/L</b>	1	04-Dec-2023 11:36
<b>Sodium</b>	<b>420</b>		<b>1.00</b>	<b>mg/L</b>	5	01-Dec-2023 23:41
<b>ANIONS BY E300.0, REV 2.1, 1993</b>		<b>Method:E300</b>		Analyst: TH		
<b>Chloride</b>	<b>641</b>		<b>10.0</b>	<b>mg/L</b>	20	29-Nov-2023 14:34
<b>Sulfate</b>	<b>1.19</b>		<b>1.00</b>	<b>mg/L</b>	2	29-Nov-2023 14:28
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>		Analyst: DC		
<b>Total Dissolved Solids (Residue, Filterable)</b>	<b>1,100</b>		<b>10.0</b>	<b>mg/L</b>	1	22-Nov-2023 12:28
<b>ALKALINITY BY -2011</b>		<b>Method:SM2320B</b>		Analyst: DW		
<b>Alkalinity, Bicarbonate (As CaCO3)</b>	<b>71.8</b>		<b>5.00</b>	<b>mg/L</b>	1	27-Nov-2023 15:32
<b>Alkalinity, Carbonate (As CaCO3)</b>	<b>34.8</b>		<b>5.00</b>	<b>mg/L</b>	1	27-Nov-2023 15:32
<b>Alkalinity, Total (As CaCO3)</b>	<b>107</b>		<b>5.00</b>	<b>mg/L</b>	1	27-Nov-2023 15:32

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

Weight / Prep Log

Client: PDC Energy  
Project: Schank J 35-22  
WorkOrder: HS23111421

Batch ID: 203895	Start Date: 22 Nov 2023 09:29	End Date: 22 Nov 2023 09:29
Method: SW3511	Prep Code: 3511_DRO	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23111421-01		33.26 (mL)	2 (mL)	0.06013	40 mL Amber

Batch ID: 203972	Start Date: 30 Nov 2023 12:00	End Date: 30 Nov 2023 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	
HS23111421-01		10 (mL)	10 (mL)	1	120 plastic HNO3

**Client:** PDC Energy  
**Project:** Schank J 35-22  
**WorkOrder:** HS23111421

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> 203895 ( 0 )		<b>Test Name :</b> TPH DRO/ORO BY SW8015C			<b>Matrix:</b> Water	
HS23111421-01	Schank J 35-22	17 Nov 2023 13:50		22 Nov 2023 09:29	03 Dec 2023 17:34	1
<b>Batch ID:</b> 203972 ( 0 )		<b>Test Name :</b> TOTAL METALS BY E200.8, REV 5.4, 1994			<b>Matrix:</b> Water	
HS23111421-01	Schank J 35-22	17 Nov 2023 13:50		30 Nov 2023 12:00	04 Dec 2023 11:36	1
HS23111421-01	Schank J 35-22	17 Nov 2023 13:50		30 Nov 2023 12:00	01 Dec 2023 23:41	5
<b>Batch ID:</b> R452615 ( 0 )		<b>Test Name :</b> LOW LEVEL VOLATILES BY SW8260C			<b>Matrix:</b> Water	
HS23111421-01	Schank J 35-22	17 Nov 2023 13:50			22 Nov 2023 16:55	500
<b>Batch ID:</b> R452654 ( 0 )		<b>Test Name :</b> TOTAL DISSOLVED SOLIDS BY SM2540C-2011			<b>Matrix:</b> Water	
HS23111421-01	Schank J 35-22	17 Nov 2023 13:50			22 Nov 2023 12:28	1
<b>Batch ID:</b> R452703 ( 0 )		<b>Test Name :</b> ALKALINITY BY -2011			<b>Matrix:</b> Water	
HS23111421-01	Schank J 35-22	17 Nov 2023 13:50			27 Nov 2023 15:32	1
<b>Batch ID:</b> R452726 ( 0 )		<b>Test Name :</b> GASOLINE RANGE ORGANICS BY SW8015C			<b>Matrix:</b> Water	
HS23111421-01	Schank J 35-22	17 Nov 2023 13:50			27 Nov 2023 17:54	500
<b>Batch ID:</b> R452727 ( 0 )		<b>Test Name :</b> DISSOLVED GASES BY RSK-175			<b>Matrix:</b> Water	
HS23111421-01	Schank J 35-22	17 Nov 2023 13:50			27 Nov 2023 12:18	500
<b>Batch ID:</b> R453005 ( 0 )		<b>Test Name :</b> ANIONS BY E300.0, REV 2.1, 1993			<b>Matrix:</b> Water	
HS23111421-01	Schank J 35-22	17 Nov 2023 13:50			29 Nov 2023 14:34	20
HS23111421-01	Schank J 35-22	17 Nov 2023 13:50			29 Nov 2023 14:28	2

**Client:** PDC Energy  
**Project:** Schank J 35-22  
**WorkOrder:** HS23111421

**QC BATCH REPORT**

Batch ID: 203895 ( 0 )		Instrument: FID-16		Method: TPH DRO/ORO BY SW8015C						
<b>MBLK</b>	Sample ID: <b>MBLK-203895</b>	Units: <b>mg/L</b>		Analysis Date: <b>03-Dec-2023 05:19</b>						
Client ID:	Run ID: <b>FID-16_453129</b>		SeqNo: <b>7703908</b>		PrepDate: <b>22-Nov-2023</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								
<i>Surr: 2-Fluorobiphenyl</i>	<i>0.04242</i>	<i>0.0050</i>	<i>0.06</i>	<i>0</i>	<i>70.7</i>	<i>60 - 135</i>				
<b>LCS</b>	Sample ID: <b>LCS-203895</b>	Units: <b>mg/L</b>		Analysis Date: <b>03-Dec-2023 05:49</b>						
Client ID:	Run ID: <b>FID-16_453129</b>		SeqNo: <b>7703909</b>		PrepDate: <b>22-Nov-2023</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)	0.6083	0.050	0.6	0	101	70 - 130				
<i>Surr: 2-Fluorobiphenyl</i>	<i>0.05395</i>	<i>0.0050</i>	<i>0.06</i>	<i>0</i>	<i>89.9</i>	<i>60 - 135</i>				
<b>LCSD</b>	Sample ID: <b>LCSD-203895</b>	Units: <b>mg/L</b>		Analysis Date: <b>03-Dec-2023 06:18</b>						
Client ID:	Run ID: <b>FID-16_453129</b>		SeqNo: <b>7703910</b>		PrepDate: <b>22-Nov-2023</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)	0.595	0.050	0.6	0	99.2	70 - 130	0.6083	2.21	20	
<i>Surr: 2-Fluorobiphenyl</i>	<i>0.05185</i>	<i>0.0050</i>	<i>0.06</i>	<i>0</i>	<i>86.4</i>	<i>60 - 135</i>	<i>0.05395</i>	<i>3.95</i>	<i>20</i>	
The following samples were analyzed in this batch: HS23111421-01										

Client: PDC Energy  
 Project: Schank J 35-22  
 WorkOrder: HS23111421

**QC BATCH REPORT**

Batch ID: R452727 ( 0 )		Instrument: FID-4		Method: DISSOLVED GASES BY RSK-175					
<b>MBLK</b>	Sample ID: MBLK-231127	Units: ug/L		Analysis Date: 27-Nov-2023 09:11					
Client ID:	Run ID: FID-4_452727	SeqNo: 7694726		PrepDate:		DF: 1			
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	1.00							

<b>LCS</b>	Sample ID: LCS-231127	Units: ug/L		Analysis Date: 27-Nov-2023 09:26					
Client ID:	Run ID: FID-4_452727	SeqNo: 7694727		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Ethane	16.98	1.00	18.04	0	94.1	75 - 125			
Methane	8.298	0.500	9.647	0	86.0	75 - 125			
Propane	26.36	1.00	26.46	0	99.6	75 - 125			

<b>LCSD</b>	Sample ID: LCSD-231127	Units: ug/L		Analysis Date: 27-Nov-2023 09:47					
Client ID:	Run ID: FID-4_452727	SeqNo: 7694728		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Ethane	18.24	1.00	18.04	0	101	75 - 125	16.98	7.17	30
Methane	8.053	0.500	9.647	0	83.5	75 - 125	8.298	2.99	30
Propane	26.44	1.00	26.46	0	99.9	75 - 125	26.36	0.295	30

The following samples were analyzed in this batch: HS23111421-01



**Client:** PDC Energy  
**Project:** Schank J 35-22  
**WorkOrder:** HS23111421

**QC BATCH REPORT**

Batch ID: R452726 ( 0 )		Instrument: FID-20		Method: GASOLINE RANGE ORGANICS BY SW8015C						
<b>MBLK</b>	Sample ID: MBLKW-231127	Units: mg/L		Analysis Date: 27-Nov-2023 16:31						
Client ID:	Run ID: FID-20_452726	SeqNo: 7694693		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	0.08139	0.00500	0.1	0	81.4	70 - 121				
<b>LCS</b>	Sample ID: LCS-231127	Units: mg/L		Analysis Date: 27-Nov-2023 16:04						
Client ID:	Run ID: FID-20_452726	SeqNo: 7694691		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9384	0.0500	1	0	93.8	76 - 124				
Surr: 4-Bromofluorobenzene	0.08411	0.00500	0.1	0	84.1	52 - 138				
<b>LCSD</b>	Sample ID: LCSD-231127	Units: mg/L		Analysis Date: 27-Nov-2023 16:17						
Client ID:	Run ID: FID-20_452726	SeqNo: 7694692		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8601	0.0500	1	0	86.0	76 - 124	0.9384	8.71	20	
Surr: 4-Bromofluorobenzene	0.08354	0.00500	0.1	0	83.5	52 - 138	0.08411	0.678	20	

The following samples were analyzed in this batch: HS23111421-01

**Client:** PDC Energy  
**Project:** Schank J 35-22  
**WorkOrder:** HS23111421

**QC BATCH REPORT**

Batch ID: 203972 ( 0 )		Instrument: ICPMS07		Method: TOTAL METALS BY E200.8, REV 5.4, 1994					
<b>MBLK</b>	Sample ID: <b>MBLK-203972</b>	Units: <b>ug/L</b>		Analysis Date: <b>01-Dec-2023 11:27</b>					
Client ID:	Run ID: <b>ICPMS07_453014</b>	SeqNo: <b>7701621</b>		PrepDate: <b>30-Nov-2023</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-203972</b>	Units: <b>ug/L</b>		Analysis Date: <b>01-Dec-2023 11:39</b>					
Client ID:	Run ID: <b>ICPMS07_453014</b>	SeqNo: <b>7701622</b>		PrepDate: <b>30-Nov-2023</b>		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	4909	500	5000	0	98.2	85 - 115			
Magnesium	4918	500	5000	0	98.4	85 - 115			
Potassium	5010	500	5000	0	100	85 - 115			
Sodium	5011	200	5000	0	100	85 - 115			

<b>MS</b>	Sample ID: <b>HS23111425-01MS</b>	Units: <b>ug/L</b>		Analysis Date: <b>01-Dec-2023 23:24</b>					
Client ID:	Run ID: <b>ICPMS07_453014</b>	SeqNo: <b>7704164</b>		PrepDate: <b>30-Nov-2023</b>		DF: <b>5</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	10100	2500	5000	4997	102	70 - 130			
Magnesium	6072	2500	5000	1099	99.5	70 - 130			
Potassium	7053	2500	5000	2113	98.8	70 - 130			
Sodium	524300	1000	5000	536700	-247	70 - 130			SO

<b>MSD</b>	Sample ID: <b>HS23111425-01MSD</b>	Units: <b>ug/L</b>		Analysis Date: <b>01-Dec-2023 23:27</b>					
Client ID:	Run ID: <b>ICPMS07_453014</b>	SeqNo: <b>7704165</b>		PrepDate: <b>30-Nov-2023</b>		DF: <b>5</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	10070	2500	5000	4997	101	70 - 130	10100	0.29	20
Magnesium	5971	2500	5000	1099	97.4	70 - 130	6072	1.68	20
Potassium	7075	2500	5000	2113	99.3	70 - 130	7053	0.322	20
Sodium	519600	1000	5000	536700	-341	70 - 130	524300	0.898	20 SO

The following samples were analyzed in this batch: HS23111421-01

Client: PDC Energy  
 Project: Schank J 35-22  
 WorkOrder: HS23111421

## QC BATCH REPORT

Batch ID: R452615 ( 0 )		Instrument: VOA10		Method: LOW LEVEL VOLATILES BY SW8260C					
<b>MBLK</b>	Sample ID: VBLKW-231122	Units: ug/L		Analysis Date: 22-Nov-2023 11:40					
Client ID:	Run ID: VOA10_452615	SeqNo: 7692493		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	44.27	1.0	50	0	88.5	70 - 123			
Surr: 4-Bromofluorobenzene	43.74	1.0	50	0	87.5	77 - 113			
Surr: Dibromofluoromethane	45.87	1.0	50	0	91.7	73 - 126			
Surr: Toluene-d8	50.25	1.0	50	0	100	81 - 120			

<b>LCS</b>	Sample ID: VLCSW-231122	Units: ug/L		Analysis Date: 22-Nov-2023 10:58					
Client ID:	Run ID: VOA10_452615	SeqNo: 7692492		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	21.68	1.0	20	0	108	74 - 120			
Ethylbenzene	23.31	1.0	20	0	117	77 - 117			
m,p-Xylene	45.84	2.0	40	0	115	77 - 122			
o-Xylene	22	1.0	20	0	110	75 - 119			
Toluene	23.36	1.0	20	0	117	77 - 118			
Xylenes, Total	67.84	3.0	60	0	113	75 - 122			
Surr: 1,2-Dichloroethane-d4	42.56	1.0	50	0	85.1	70 - 123			
Surr: 4-Bromofluorobenzene	44.48	1.0	50	0	89.0	77 - 113			
Surr: Dibromofluoromethane	43.94	1.0	50	0	87.9	73 - 126			
Surr: Toluene-d8	51.46	1.0	50	0	103	81 - 120			

**Client:** PDC Energy  
**Project:** Schank J 35-22  
**WorkOrder:** HS23111421

**QC BATCH REPORT**

Batch ID: R452615 ( 0 )		Instrument: VOA10		Method: LOW LEVEL VOLATILES BY SW8260C						
<b>MS</b>		Sample ID: HS23111272-04MS		Units: ug/L		Analysis Date: 22-Nov-2023 12:43				
Client ID:		Run ID: VOA10_452615		SeqNo: 7692496		PrepDate:		DF: 50		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	16350	50	1000	14510	184	70 - 127				SEO
Ethylbenzene	844.8	50	1000	187	65.8	70 - 124				S
m,p-Xylene	1296	100	2000	113.4	59.1	70 - 130				S
o-Xylene	721.8	50	1000	139.8	58.2	70 - 124				S
Toluene	741.8	50	1000	117.8	62.4	70 - 123				S
Xylenes, Total	2018	150	3000	253.2	58.8	70 - 130				S
Surr: 1,2-Dichloroethane-d4	2149	50	2500	0	86.0	70 - 126				
Surr: 4-Bromofluorobenzene	2264	50	2500	0	90.5	77 - 113				
Surr: Dibromofluoromethane	2203	50	2500	0	88.1	77 - 123				
Surr: Toluene-d8	2545	50	2500	0	102	82 - 127				

<b>MSD</b>		Sample ID: HS23111272-04MSD		Units: ug/L		Analysis Date: 22-Nov-2023 13:04				
Client ID:		Run ID: VOA10_452615		SeqNo: 7692497		PrepDate:		DF: 50		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	16130	50	1000	14510	162	70 - 127	16350	1.37	20	SEO
Ethylbenzene	928.8	50	1000	187	74.2	70 - 124	844.8	9.47	20	
m,p-Xylene	1503	100	2000	113.4	69.5	70 - 130	1296	14.8	20	S
o-Xylene	805.8	50	1000	139.8	66.6	70 - 124	721.8	11	20	S
Toluene	839.2	50	1000	117.8	72.1	70 - 123	741.8	12.3	20	
Xylenes, Total	2309	150	3000	253.2	68.5	70 - 130	2018	13.5	20	S
Surr: 1,2-Dichloroethane-d4	2176	50	2500	0	87.0	70 - 126	2149	1.22	20	
Surr: 4-Bromofluorobenzene	2205	50	2500	0	88.2	77 - 113	2264	2.65	20	
Surr: Dibromofluoromethane	2228	50	2500	0	89.1	77 - 123	2203	1.17	20	
Surr: Toluene-d8	2515	50	2500	0	101	82 - 127	2545	1.19	20	

The following samples were analyzed in this batch: HS23111421-01

**Client:** PDC Energy  
**Project:** Schank J 35-22  
**WorkOrder:** HS23111421

**QC BATCH REPORT**

Batch ID: R452654 ( 0 )		Instrument: Balance1		Method: TOTAL DISSOLVED SOLIDS BY SM2540C-2011						
MBLK	Sample ID: WMBLK-11222023	Units: mg/L		Analysis Date: 22-Nov-2023 12:28						
Client ID:	Run ID: Balance1_452654	SeqNo: 7693122		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-11222023	Units: mg/L		Analysis Date: 22-Nov-2023 12:28						
Client ID:	Run ID: Balance1_452654	SeqNo: 7693121		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)		1090	10.0	1000	0	109	85 - 115			
DUP	Sample ID: HS23111425-01DUP	Units: mg/L		Analysis Date: 22-Nov-2023 12:28						
Client ID:	Run ID: Balance1_452654	SeqNo: 7693109		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)		1276	10.0				1280	0.313	20	
DUP	Sample ID: HS23111405-01DUP	Units: mg/L		Analysis Date: 22-Nov-2023 12:28						
Client ID:	Run ID: Balance1_452654	SeqNo: 7693103		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)		1280	10.0				1284	0.312	20	
The following samples were analyzed in this batch:		HS23111421-01								

**Client:** PDC Energy  
**Project:** Schank J 35-22  
**WorkOrder:** HS23111421

**QC BATCH REPORT**

Batch ID: R452703 ( 0 )		Instrument: Skalar 03		Method: ALKALINITY BY -2011					
<b>MBLK</b>	Sample ID: MBLK-11.27.2023	Units: mg/L		Analysis Date: 27-Nov-2023 14:11					
Client ID:	Run ID: Skalar 03_452703	SeqNo: 7694022		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-11.27.2023	Units: mg/L		Analysis Date: 27-Nov-2023 14:18					
Client ID:	Run ID: Skalar 03_452703	SeqNo: 7694023		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)	935	5.00	1000	0	93.5	85 - 115			
Alkalinity, Total (As CaCO3)	938.3	5.00	1000	0	93.8	85 - 115			

<b>LCSD</b>	Sample ID: LCSD-11.27.2023	Units: mg/L		Analysis Date: 27-Nov-2023 14:25					
Client ID:	Run ID: Skalar 03_452703	SeqNo: 7694024		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)	935.8	5.00	1000	0	93.6	85 - 115	935	0.0855	20
Alkalinity, Total (As CaCO3)	939.1	5.00	1000	0	93.9	85 - 115	938.3	0.0852	20

<b>DUP</b>	Sample ID: HS23111388-01DUP	Units: mg/L		Analysis Date: 27-Nov-2023 14:39					
Client ID:	Run ID: Skalar 03_452703	SeqNo: 7694027		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)	127.8	5.00					126.8	0.786	20
Alkalinity, Carbonate (As CaCO3)	ND	5.00					0	0	20
Alkalinity, Total (As CaCO3)	127.8	5.00					126.8	0.786	20

The following samples were analyzed in this batch: HS23111421-01

**Client:** PDC Energy  
**Project:** Schank J 35-22  
**WorkOrder:** HS23111421

**QC BATCH REPORT**

Batch ID: R453005 ( 0 )		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993					
<b>MBLK</b>	Sample ID: MBLK	Units: mg/L		Analysis Date: 29-Nov-2023 11:17					
Client ID:	Run ID: ICS-Integrion_453005		SeqNo: 7701259		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Chloride	ND	0.500							
Sulfate	ND	0.500							
<b>LCS</b>	Sample ID: LCS	Units: mg/L		Analysis Date: 29-Nov-2023 11:29					
Client ID:	Run ID: ICS-Integrion_453005		SeqNo: 7701260		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Chloride	20.17	0.500	20	0	101	90 - 110			
Sulfate	20.8	0.500	20	0	104	90 - 110			
<b>MS</b>	Sample ID: HS23111767-01MS	Units: mg/L		Analysis Date: 29-Nov-2023 12:11					
Client ID:	Run ID: ICS-Integrion_453005		SeqNo: 7701265		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Chloride	96.77	0.500	10	87.68	91.0	80 - 120			O
Sulfate	1066	0.500	10	1119	-536	80 - 120			SEO
<b>MS</b>	Sample ID: HS23111728-01MS	Units: mg/L		Analysis Date: 29-Nov-2023 11:53					
Client ID:	Run ID: ICS-Integrion_453005		SeqNo: 7701262		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Chloride	10.72	0.500	10	0.119	106	80 - 120			
Sulfate	11.27	0.500	10	0	113	80 - 120			
<b>MS</b>	Sample ID: HS23111422-01MS	Units: mg/L		Analysis Date: 29-Nov-2023 14:46					
Client ID:	Run ID: ICS-Integrion_453005		SeqNo: 7701285		PrepDate:		DF: 10		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Chloride	698.6	5.00	100	601.4	97.2	80 - 120			O
Sulfate	113.4	5.00	100	2.131	111	80 - 120			

**Client:** PDC Energy  
**Project:** Schank J 35-22  
**WorkOrder:** HS23111421

**QC BATCH REPORT**

Batch ID: R453005 ( 0 )		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993						
<b>MSD</b>	Sample ID: HS23111767-01MSD	Units: mg/L		Analysis Date: 29-Nov-2023 12:17						
Client ID:	Run ID: ICS-Integrion_453005		SeqNo: 7701266		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	96.51	0.500	10	87.68	88.3	80 - 120	96.77	0.272	20	O
Sulfate	1064	0.500	10	1119	-555	80 - 120	1066	0.171	20	SEO
<b>MSD</b>	Sample ID: HS23111728-01MSD	Units: mg/L		Analysis Date: 29-Nov-2023 11:59						
Client ID:	Run ID: ICS-Integrion_453005		SeqNo: 7701263		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	10.83	0.500	10	0.119	107	80 - 120	10.72	1.02	20	
Sulfate	11.46	0.500	10	0	115	80 - 120	11.27	1.69	20	
<b>MSD</b>	Sample ID: HS23111422-01MSD	Units: mg/L		Analysis Date: 29-Nov-2023 14:52						
Client ID:	Run ID: ICS-Integrion_453005		SeqNo: 7701286		PrepDate:		DF: 10			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	699.4	5.00	100	601.4	98.1	80 - 120	698.6	0.126	20	O
Sulfate	112.6	5.00	100	2.131	110	80 - 120	113.4	0.69	20	
The following samples were analyzed in this batch: HS23111421-01										



**Client:** PDC Energy  
**Project:** Schank J 35-22  
**WorkOrder:** HS23111421

**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	27-Mar-2024
California	2919; 2024	30-Apr-2024
Dept of Defense	L23-358	31-May-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2023-2024	30-Apr-2024
Oklahoma	2023-140	31-Aug-2024
Texas	T104704231-23-32	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

## Sample Receipt Checklist

Work Order ID: HS23111421

Date/Time Received: 18-Nov-2023 08:40

Client Name: PDC Energy 80203

Received by: Corey Grandits

Completed By: /S/ Corey Grandits

21-Nov-2023 13:51

Reviewed by: /S/ Tyler Monroe

22-Nov-2023 13:37

eSignature

Date/Time

eSignature

Date/Time

Matrices: WCarrier 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 ☐

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):

3.0UC/2.9C

IR31

Cooler(s)/Kit(s):

51620

Date/Time sample(s) sent to storage:

11/21/23

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:

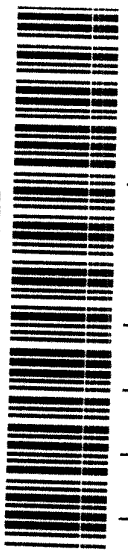
Regarding:

Comments:

Corrective Action:

**ALS Environmental**965 E 11th St  
Loveland, CO 80537  
PH: 970-305-1648**Chain-of-Custody**


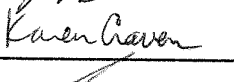

WORKORDER #

<b>SAMPLER</b> Jeff Braden		<b>DATE</b> 11/17/23		<b>PAGE</b> 1 of 1																
<b>PROJECT NAME</b> Schank J 35-22	<b>FACILITY ID</b> 123-26482	<b>TURNAROUND</b> Standard		<b>DISPOSAL</b> By Lab or Return to Client																
<b>PROJECT No.</b> 09C2073608	<b>EDD FORMAT</b> COGCC EDD, LTE	<div>RSK 175 SW8260_25 SW8015M SM2320B EPA200.7/208 EPA 300.0 SM2540C</div> <div>Dissolved Methane, Ethane, Propane BTX &amp; TPH GRO TPH DRO Alkalinity, Carbonate, Bicarbonate, Total Total Cations - see comments Total Anions - see comments Total Dissolved Solids</div>		<div>HS23111421 PDC Energy Schank J 35-22</div> 																
<b>COMPANY NAME</b> PDC Energy	<b>PURCHASE ORDER</b> N/A																			
<b>SEND REPORT TO</b> Jenifer Hakkarinen	<b>BILL TO COMPANY</b> PDC Energy																			
<b>ADDRESS</b> 1775 Sherman ST, Suite 3000	<b>INVOICE ATTN TO</b> Jenifer Hakkarinen																			
<b>CITY / STATE / ZIP</b> Denver, CO 80203	<b>ADDRESS</b> 1775 Sherman Street, Suite 3000																			
<b>PHONE</b> 303-880-5815	<b>CITY / STATE / ZIP</b> Denver, Colorado																			
<b>FAX</b>	<b>PHONE</b> 303.860.5815																			
<b>E-MAIL</b> jenifer.hakkarinen@pdce.com jessica.johannsen@pdce.com jbraden@ensolum.com	<b>E-MAIL</b> jenifer.hakkarinen@pdce.com																			
<b>Lab ID</b>	<b>Field ID</b>	<b>Matrix</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b># Bottles</b>	<b>Pres.</b>	<b>QC</b>													
	Schank J 35-22	W	11/17/23	1350	11	1,2	II	X	X	X	X	X	X	X						

\*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.

<b>Comments:</b> Calcium, Chloride, Magnesium, Potassium, Sodium, Sulfate* samples analyzed per OGCC Bradenhead Sampling Program bubbles are present in voas, please proceed with analysis  Cations/Anions: COCLUR 51620 4PL 3.00 CIF-0-1 1024	<b>QC PACKAGE (check below)</b>		<b>RELINQUISHED BY</b>	<b>SIGNATURE</b>	<b>PRINTED NAME</b>	<b>DATE</b>	<b>TIME</b>
	<input checked="" type="checkbox"/>	LEVEL II (Standard QC)			Jeff Braden	11/17/23	1500
	<input type="checkbox"/>	LEVEL III (Std QC + forms)	<b>RECEIVED BY</b>		Karen Craven	11/17-23	1500
	<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)	<b>RELINQUISHED BY</b>		CA	11/18/23	0840
	<input type="checkbox"/>		<b>RECEIVED BY</b>				
<b>reservative Key:</b> 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035		<b>RELINQUISHED BY</b>					
		<b>RECEIVED BY</b>					

51620

NOV 18 2023

ORIGIN ID:GXVA (281) 530-5656  
SAMPLE RECEIVING  
ALS  
10450 STANCLIFF RD  
SUITE 210  
HOUSTON, TX 77099  
UNITED STATES US

SH  
AC  
DC  
BILL

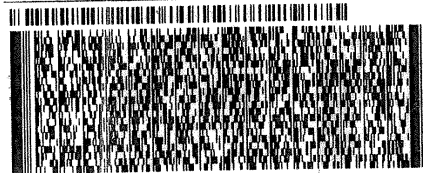
B 12:00  
5

608

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

51620

(281) 530-5656  
PO: 967554812



**FedEx**  
Express



JP31 022110201W

TRK# 7122 9261 5432  
0201

**SATURDAY 12:00P**  
**PRIORITY OVERNIGHT**

**XO SGRA**

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

Per 6 16707-434 MTW EXP 05/22

