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September 15, 2022

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

Work Order: **HS22081730**

Laboratory Results for: **Kodak 34-44**

Dear Jenifer Hakkarinen,

ALS Environmental received 1 sample(s) on Aug 31, 2022 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

Bernadette A. Fini
Project Manager

Client: PDC Energy
Project: Kodak 34-44
Work Order: HS22081730

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22081730-01	Kodak 34-44	Water		29-Aug-2022 13:50	31-Aug-2022 09:15	<input type="checkbox"/>

Client: PDC Energy
Project: Kodak 34-44
Work Order: HS22081730

CASE NARRATIVE

GC Semivolatiles by Method RSK-175**Batch ID: R416366****Sample ID: HS22081267-02MS**

- MS and MSD are for an unrelated sample

GC Semivolatiles by Method SW8015M**Batch ID: 183075**

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

GC Volatiles by Method SW8015**Batch ID: R416438**

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

GCMS Volatiles by Method SW8260**Batch ID: R416740****Sample ID: Kodak 34-44 (HS22081730-01)**

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

Metals by Method E200.8**Batch ID: 183476****Sample ID: HS22081666-02MSD**

- MSD is for an unrelated sample (Calcium)

WetChemistry by Method SM2320B**Batch ID: R416816**

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

WetChemistry by Method E300**Batch ID: R416696****Sample ID: HS22090185-01MS**

- MS and MSD are for an unrelated sample

Sample ID: HS22090249-01MS

- MS and MSD are for an unrelated sample

WetChemistry by Method M2540C**Batch ID: R416543**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
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Client: PDC Energy
 Project: Kodak 34-44
 Sample ID: Kodak 34-44
 Collection Date: 29-Aug-2022 13:50

ANALYTICAL REPORT

WorkOrder:HS22081730
 Lab ID:HS22081730-01
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		Method:SW8260		Analyst: AKP		
Benzene	410		5.0	ug/L	5	08-Sep-2022 16:57
Ethylbenzene	75		1.0	ug/L	1	08-Sep-2022 12:07
m,p-Xylene	240		2.0	ug/L	1	08-Sep-2022 12:07
o-Xylene	5.7		1.0	ug/L	1	08-Sep-2022 12:07
Toluene	16		1.0	ug/L	1	08-Sep-2022 12:07
Xylenes, Total	250		1.0	ug/L	1	08-Sep-2022 12:07
Surr: 1,2-Dichloroethane-d4	104		70-126	%REC	1	08-Sep-2022 12:07
Surr: 1,2-Dichloroethane-d4	103		70-126	%REC	5	08-Sep-2022 16:57
Surr: 4-Bromofluorobenzene	102		77-113	%REC	1	08-Sep-2022 12:07
Surr: 4-Bromofluorobenzene	101		77-113	%REC	5	08-Sep-2022 16:57
Surr: Dibromofluoromethane	102		77-123	%REC	5	08-Sep-2022 16:57
Surr: Dibromofluoromethane	99.7		77-123	%REC	1	08-Sep-2022 12:07
Surr: Toluene-d8	104		82-127	%REC	1	08-Sep-2022 12:07
Surr: Toluene-d8	104		82-127	%REC	5	08-Sep-2022 16:57
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: FT		
Gasoline Range Organics	2.82		0.0500	mg/L	1	02-Sep-2022 12:59
Surr: 4-Bromofluorobenzene	113		70-123	%REC	1	02-Sep-2022 12:59
DISSOLVED GASES BY RSK-175		Method:RSK-175		Analyst: PPM		
Ethane	1,100		500	ug/L	500	01-Sep-2022 14:09
Methane	8,740		250	ug/L	500	01-Sep-2022 14:09
Propane	1,640		500	ug/L	500	01-Sep-2022 14:09
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3511 / 31-Aug-2022		Analyst: PPM
DRO (>C10 - C28)	0.20		0.051	mg/L	1	07-Sep-2022 17:14
Surr: 2-Fluorobiphenyl	96.3		60-135	%REC	1	07-Sep-2022 17:14
TOTAL METALS BY E200.8, REV 5.4, 1994		Method:E200.8		Prep:E200.8 / 13-Sep-2022		Analyst: YP
Calcium	2.56		0.500	mg/L	1	15-Sep-2022 15:02
Magnesium	ND		0.500	mg/L	1	15-Sep-2022 15:02
Potassium	3.02		2.50	mg/L	5	15-Sep-2022 01:32
Sodium	470		1.00	mg/L	5	15-Sep-2022 01:32
ANIONS BY E300.0, REV 2.1, 1993		Method:E300		Analyst: TH		
Chloride	172		5.00	mg/L	10	07-Sep-2022 18:02
Sulfate	1.65		0.500	mg/L	1	07-Sep-2022 17:57
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		Method:M2540C		Analyst: CWG		
Total Dissolved Solids (Residue, Filterable)	1,640		10.0	mg/L	1	02-Sep-2022 12:24

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

Client: PDC Energy
Project: Kodak 34-44
Sample ID: Kodak 34-44
Collection Date: 29-Aug-2022 13:50

ANALYTICAL REPORT

WorkOrder:HS22081730
Lab ID:HS22081730-01
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ALKALINITY BY SM 2320B-2011		Method:SM2320B		Analyst: JAC		
Alkalinity, Bicarbonate (As CaCO ₃)	306		5.00	mg/L	1	09-Sep-2022 11:50
Alkalinity, Carbonate (As CaCO ₃)	432		5.00	mg/L	1	09-Sep-2022 11:50
Alkalinity, Total (As CaCO ₃)	739		5.00	mg/L	1	09-Sep-2022 11:50

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

Weight / Prep Log

Client: PDC Energy

Project: Kodak 34-44

WorkOrder: HS22081730

Batch ID: 183075	Start Date: 31 Aug 2022 09:13	End Date: 01 Sep 2022 16:00
Method: SW3511		Prep Code: 3511_DRO

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22081730-01		32.64 (mL)	2 (mL)	0.06127	40 mL Amber

Batch ID: 183476	Start Date: 13 Sep 2022 09:30	End Date: 13 Sep 2022 13:30
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	
HS22081730-01		10 (mL)	10 (mL)	1	250 mL plastic, HNO3 to pH <2

Client: PDC Energy
Project: Kodak 34-44
WorkOrder: HS22081730

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 183075 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Water	
HS22081730-01	Kodak 34-44	29 Aug 2022 13:50		31 Aug 2022 09:13	07 Sep 2022 17:14	1
Batch ID: 183476 (0)		Test Name : TOTAL METALS BY E200.8, REV 5.4, 1994			Matrix: Water	
HS22081730-01	Kodak 34-44	29 Aug 2022 13:50		13 Sep 2022 09:30	15 Sep 2022 15:02	1
HS22081730-01	Kodak 34-44	29 Aug 2022 13:50		13 Sep 2022 09:30	15 Sep 2022 01:32	5
Batch ID: R416366 (0)		Test Name : DISSOLVED GASES BY RSK-175			Matrix: Water	
HS22081730-01	Kodak 34-44	29 Aug 2022 13:50			01 Sep 2022 14:09	500
Batch ID: R416438 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Water	
HS22081730-01	Kodak 34-44	29 Aug 2022 13:50			02 Sep 2022 12:59	1
Batch ID: R416543 (0)		Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C-2011			Matrix: Water	
HS22081730-01	Kodak 34-44	29 Aug 2022 13:50			02 Sep 2022 12:24	1
Batch ID: R416696 (0)		Test Name : ANIONS BY E300.0, REV 2.1, 1993			Matrix: Water	
HS22081730-01	Kodak 34-44	29 Aug 2022 13:50			07 Sep 2022 18:02	10
HS22081730-01	Kodak 34-44	29 Aug 2022 13:50			07 Sep 2022 17:57	1
Batch ID: R416740 (0)		Test Name : LOW LEVEL VOLATILES BY SW8260C			Matrix: Water	
HS22081730-01	Kodak 34-44	29 Aug 2022 13:50			08 Sep 2022 16:57	5
HS22081730-01	Kodak 34-44	29 Aug 2022 13:50			08 Sep 2022 12:07	1
Batch ID: R416816 (0)		Test Name : ALKALINITY BY SM 2320B-2011			Matrix: Water	
HS22081730-01	Kodak 34-44	29 Aug 2022 13:50			09 Sep 2022 11:50	1

Client: PDC Energy
 Project: Kodak 34-44
 WorkOrder: HS22081730

QC BATCH REPORT

Batch ID: 183075 (0)		Instrument: FID-16		Method: TPH DRO/ORO BY SW8015C						
MBLK	Sample ID: MBLK-183075	Units: mg/L		Analysis Date: 01-Sep-2022 19:30						
Client ID:	Run ID: FID-16_416524		SeqNo: 6834866		PrepDate: 31-Aug-2022		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	ND	0.050								
Surr: 2-Fluorobiphenyl	0.03792	0.0050	0.06	0	63.2	60 - 135				
LCS	Sample ID: LCS-183075	Units: mg/L		Analysis Date: 01-Sep-2022 19:59						
Client ID:	Run ID: FID-16_416524		SeqNo: 6834867		PrepDate: 31-Aug-2022		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	0.5229	0.050	0.6	0	87.1	70 - 130				
Surr: 2-Fluorobiphenyl	0.03699	0.0050	0.06	0	61.6	60 - 135				
LCSD	Sample ID: LCSD-183075	Units: mg/L		Analysis Date: 01-Sep-2022 20:29						
Client ID:	Run ID: FID-16_416524		SeqNo: 6834868		PrepDate: 31-Aug-2022		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	0.4602	0.050	0.6	0	76.7	70 - 130	0.5229	12.7	20	
Surr: 2-Fluorobiphenyl	0.03652	0.0050	0.06	0	60.9	60 - 135	0.03699	1.27	20	
The following samples were analyzed in this batch: HS22081730-01										

Client: PDC Energy
Project: Kodak 34-44
WorkOrder: HS22081730

QC BATCH REPORT

Batch ID: R416366 (0)		Instrument: FID-4		Method: DISSOLVED GASES BY RSK-175						
MBLK	Sample ID: MBLK-220901	Units: ug/L		Analysis Date: 01-Sep-2022 09:00						
Client ID:	Run ID: FID-4_416366		SeqNo: 6830915		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								

LCS	Sample ID: LCS-220901	Units: ug/L		Analysis Date: 01-Sep-2022 09:24						
Client ID:	Run ID: FID-4_416366		SeqNo: 6830916		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	18.83	1.00	18.04	0	104	75 - 125				
Methane	8.649	0.500	9.647	0	89.7	75 - 125				
Propane	30.78	1.00	26.46	0	116	75 - 125				

MS	Sample ID: HS22081267-02MS	Units: ug/L		Analysis Date: 01-Sep-2022 10:43						
Client ID:	Run ID: FID-4_416366		SeqNo: 6830920		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	22.76	1.00	18.04	0	126	75 - 125				S
Methane	1869	0.500	9.647	1838	320	75 - 125				SEO
Propane	28.16	1.00	26.46	0	106	75 - 125				

MSD	Sample ID: HS22081267-02MSD	Units: ug/L		Analysis Date: 01-Sep-2022 10:57						
Client ID:	Run ID: FID-4_416366		SeqNo: 6830921		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	22.41	1.00	18.04	0	124	75 - 125	22.76	1.54	30	
Methane	1863	0.500	9.647	1838	258	75 - 125	1869	0.318	30	SEO
Propane	28.22	1.00	26.46	0	107	75 - 125	28.16	0.211	30	

The following samples were analyzed in this batch: HS22081730-01

Client: PDC Energy
 Project: Kodak 34-44
 WorkOrder: HS22081730

QC BATCH REPORT

Batch ID: R416438 (0)		Instrument: FID-20		Method: GASOLINE RANGE ORGANICS BY SW8015C						
MBLK	Sample ID: MBLK-2200902	Units: mg/L		Analysis Date: 02-Sep-2022 09:48						
Client ID:	Run ID: FID-20_416438		SeqNo: 6832490		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	0.1074	0.00500	0.1	0	107	70 - 121				
LCS	Sample ID: LCS-220902	Units: mg/L		Analysis Date: 02-Sep-2022 09:16						
Client ID:	Run ID: FID-20_416438		SeqNo: 6832488		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8371	0.0500	1	0	83.7	76 - 124				
Surr: 4-Bromofluorobenzene	0.09048	0.00500	0.1	0	90.5	52 - 138				
LCSD	Sample ID: LCSD-220902	Units: mg/L		Analysis Date: 02-Sep-2022 09:32						
Client ID:	Run ID: FID-20_416438		SeqNo: 6832489		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.7874	0.0500	1	0	78.7	76 - 124	0.8371	6.12	20	
Surr: 4-Bromofluorobenzene	0.0808	0.00500	0.1	0	80.8	52 - 138	0.09048	11.3	20	
The following samples were analyzed in this batch: HS22081730-01										

Client: PDC Energy
Project: Kodak 34-44
WorkOrder: HS22081730

QC BATCH REPORT

Batch ID: 183476 (0)		Instrument: ICPMS07		Method: TOTAL METALS BY E200.8, REV 5.4, 1994					
MBLK	Sample ID: MBLK-183476	Units: ug/L		Analysis Date: 15-Sep-2022 14:57					
Client ID:	Run ID: ICPMS07_417250	SeqNo: 6851806		PrepDate: 13-Sep-2022		DF: 1			
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							

LCS	Sample ID: LCS-183476	Units: ug/L		Analysis Date: 15-Sep-2022 00:40					
Client ID:	Run ID: ICPMS07_417112	SeqNo: 6850484		PrepDate: 13-Sep-2022		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Calcium	4881	500	5000	0	97.6	85 - 115			
Magnesium	5153	500	5000	0	103	85 - 115			
Potassium	5085	500	5000	0	102	85 - 115			
Sodium	4976	200	5000	0	99.5	85 - 115			

MS	Sample ID: HS22081666-02MS	Units: ug/L		Analysis Date: 15-Sep-2022 00:49					
Client ID:	Run ID: ICPMS07_417112	SeqNo: 6850489		PrepDate: 13-Sep-2022		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Calcium	92550	500	5000	86680	117	70 - 130			O
Magnesium	42600	500	5000	36720	118	70 - 130			O
Potassium	9135	500	5000	4022	102	70 - 130			
Sodium	60610	200	5000	54350	125	70 - 130			O

MS	Sample ID: HS22081666-01MS	Units: ug/L		Analysis Date: 15-Sep-2022 00:44					
Client ID:	Run ID: ICPMS07_417112	SeqNo: 6850486		PrepDate: 13-Sep-2022		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Calcium	89920	500	5000	85690	84.6	70 - 130			O
Magnesium	40810	500	5000	36460	87.0	70 - 130			O
Potassium	8791	500	5000	4001	95.8	70 - 130			
Sodium	58410	200	5000	53980	88.6	70 - 130			O

Client: PDC Energy
Project: Kodak 34-44
WorkOrder: HS22081730

QC BATCH REPORT

Batch ID: 183476 (0)		Instrument: ICPMS07		Method: TOTAL METALS BY E200.8, REV 5.4, 1994						
MSD		Sample ID: HS22081666-02MSD		Units: ug/L		Analysis Date: 15-Sep-2022 00:51				
Client ID:		Run ID: ICPMS07_417112		SeqNo: 6850490		PrepDate: 13-Sep-2022		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	89840	500	5000	86680	63.3	70 - 130	92550	2.96	20	SO
Magnesium	41080	500	5000	36720	87.3	70 - 130	42600	3.62	20	O
Potassium	8852	500	5000	4022	96.6	70 - 130	9135	3.15	20	
Sodium	58440	200	5000	54350	81.8	70 - 130	60610	3.65	20	O

MSD		Sample ID: HS22081666-01MSD		Units: ug/L		Analysis Date: 15-Sep-2022 00:45				
Client ID:		Run ID: ICPMS07_417112		SeqNo: 6850487		PrepDate: 13-Sep-2022		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	90090	500	5000	85690	87.9	70 - 130	89920	0.187	20	O
Magnesium	41510	500	5000	36460	101	70 - 130	40810	1.7	20	O
Potassium	9001	500	5000	4001	100	70 - 130	8791	2.36	20	
Sodium	59190	200	5000	53980	104	70 - 130	58410	1.33	20	O

The following samples were analyzed in this batch: HS22081730-01

Client: PDC Energy
 Project: Kodak 34-44
 WorkOrder: HS22081730

QC BATCH REPORT

Batch ID: R416740 (0)		Instrument: VOA7		Method: LOW LEVEL VOLATILES BY SW8260C					
MBLK	Sample ID: VBLKW-220908	Units: ug/L		Analysis Date: 08-Sep-2022 09:50					
Client ID:	Run ID: VOA7_416740	SeqNo: 6839561		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	1.0							
Surr: 1,2-Dichloroethane-d4	51.79	1.0	50	0	104	70 - 123			
Surr: 4-Bromofluorobenzene	49.82	1.0	50	0	99.6	77 - 113			
Surr: Dibromofluoromethane	51.21	1.0	50	0	102	73 - 126			
Surr: Toluene-d8	51.68	1.0	50	0	103	81 - 120			

LCS	Sample ID: VLCSW-220908	Units: ug/L		Analysis Date: 08-Sep-2022 09:11					
Client ID:	Run ID: VOA7_416740	SeqNo: 6839559		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	19.24	1.0	20	0	96.2	74 - 120			
Ethylbenzene	19.43	1.0	20	0	97.1	77 - 117			
m,p-Xylene	40.14	2.0	40	0	100	77 - 122			
o-Xylene	20.13	1.0	20	0	101	75 - 119			
Toluene	19.68	1.0	20	0	98.4	77 - 118			
Xylenes, Total	60.27	1.0	60	0	100	75 - 122			
Surr: 1,2-Dichloroethane-d4	52.61	1.0	50	0	105	70 - 123			
Surr: 4-Bromofluorobenzene	50.7	1.0	50	0	101	77 - 113			
Surr: Dibromofluoromethane	50.61	1.0	50	0	101	73 - 126			
Surr: Toluene-d8	51.79	1.0	50	0	104	81 - 120			

Client: PDC Energy
 Project: Kodak 34-44
 WorkOrder: HS22081730

QC BATCH REPORT

Batch ID: R416740 (0)		Instrument: VOA7		Method: LOW LEVEL VOLATILES BY SW8260C					
MS		Sample ID: HS22090277-01MS		Units: ug/L		Analysis Date: 08-Sep-2022 17:17			
Client ID:		Run ID: VOA7_416740		SeqNo: 6840676		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	19.36	1.0	20	0	96.8	70 - 127			
Ethylbenzene	19.34	1.0	20	0	96.7	70 - 124			
m,p-Xylene	39.83	2.0	40	1.153	96.7	70 - 130			
o-Xylene	19.85	1.0	20	0.4191	97.1	70 - 124			
Toluene	19.46	1.0	20	0	97.3	70 - 123			
Xylenes, Total	59.68	1.0	60	1.573	96.8	70 - 130			
Surr: 1,2-Dichloroethane-d4	52.86	1.0	50	0	106	70 - 126			
Surr: 4-Bromofluorobenzene	51.19	1.0	50	0	102	77 - 113			
Surr: Dibromofluoromethane	51.28	1.0	50	0	103	77 - 123			
Surr: Toluene-d8	51.74	1.0	50	0	103	82 - 127			

MSD		Sample ID: HS22090277-01MSD		Units: ug/L		Analysis Date: 08-Sep-2022 17:37			
Client ID:		Run ID: VOA7_416740		SeqNo: 6840677		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	18.43	1.0	20	0	92.2	70 - 127	19.36	4.9	20
Ethylbenzene	18.93	1.0	20	0	94.6	70 - 124	19.34	2.13	20
m,p-Xylene	38.96	2.0	40	1.153	94.5	70 - 130	39.83	2.2	20
o-Xylene	19.29	1.0	20	0.4191	94.3	70 - 124	19.85	2.87	20
Toluene	18.97	1.0	20	0	94.9	70 - 123	19.46	2.52	20
Xylenes, Total	58.25	1.0	60	1.573	94.5	70 - 130	59.68	2.42	20
Surr: 1,2-Dichloroethane-d4	52.37	1.0	50	0	105	70 - 126	52.86	0.93	20
Surr: 4-Bromofluorobenzene	51.15	1.0	50	0	102	77 - 113	51.19	0.0816	20
Surr: Dibromofluoromethane	50.76	1.0	50	0	102	77 - 123	51.28	1.03	20
Surr: Toluene-d8	52.03	1.0	50	0	104	82 - 127	51.74	0.566	20

The following samples were analyzed in this batch: HS22081730-01

Client: PDC Energy
Project: Kodak 34-44
WorkOrder: HS22081730

QC BATCH REPORT

Batch ID: R416543 (0)		Instrument: Balance1		Method: TOTAL DISSOLVED SOLIDS BY SM2540C-2011						
MBLK	Sample ID: WBLK-090222	Units: mg/L		Analysis Date: 02-Sep-2022 12:24						
Client ID:	Run ID: Balance1_416543	SeqNo: 6835199		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-090222	Units: mg/L		Analysis Date: 02-Sep-2022 12:24						
Client ID:	Run ID: Balance1_416543	SeqNo: 6835200		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)		1062	10.0	1000	0	106	85 - 115			
DUP	Sample ID: HS22090039-01DUP	Units: mg/L		Analysis Date: 02-Sep-2022 12:24						
Client ID:	Run ID: Balance1_416543	SeqNo: 6835198		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)		180	10.0				184	2.2	5	
The following samples were analyzed in this batch:		HS22081730-01								

Client: PDC Energy
Project: Kodak 34-44
WorkOrder: HS22081730

QC BATCH REPORT

Batch ID: R416696 (0)		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993					
MBLK	Sample ID: MBLK	Units: mg/L		Analysis Date: 07-Sep-2022 14:15					
Client ID:	Run ID: ICS-Integrion_416696		SeqNo: 6838635		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							

LCS	Sample ID: LCS	Units: mg/L		Analysis Date: 07-Sep-2022 14:20					
Client ID:	Run ID: ICS-Integrion_416696		SeqNo: 6838636		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	20	0.500	20	0	100	90 - 110			
Sulfate	20.41	0.500	20	0	102	90 - 110			

MS	Sample ID: HS22090249-01MS	Units: mg/L		Analysis Date: 07-Sep-2022 14:31					
Client ID:	Run ID: ICS-Integrion_416696		SeqNo: 6838638		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	36.62	0.500	10	27.08	95.4	80 - 120			
Sulfate	1192	0.500	10	1216	-242	80 - 120			SEO

MS	Sample ID: HS22090185-01MS	Units: mg/L		Analysis Date: 07-Sep-2022 16:06					
Client ID:	Run ID: ICS-Integrion_416696		SeqNo: 6838654		PrepDate:		DF: 10		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	588.1	5.00	100	513.4	74.7	80 - 120			SO
Sulfate	890.8	5.00	100	830.4	60.4	80 - 120			SO

MSD	Sample ID: HS22090249-01MSD	Units: mg/L		Analysis Date: 07-Sep-2022 14:36					
Client ID:	Run ID: ICS-Integrion_416696		SeqNo: 6838639		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	36.45	0.500	10	27.08	93.8	80 - 120	36.62	0.446	20
Sulfate	1185	0.500	10	1216	-308	80 - 120	1192	0.559	20 SEO

Client: PDC Energy
Project: Kodak 34-44
WorkOrder: HS22081730

QC BATCH REPORT

Batch ID: R416696 (0)		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993							
MSD		Sample ID: HS22090185-01MSD		Units: mg/L		Analysis Date: 07-Sep-2022 16:11					
Client ID:		Run ID: ICS-Integrion_416696		SeqNo: 6838655		PrepDate:		DF: 10			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Chloride	588.5	5.00	100	513.4	75.1	80 - 120	588.1	0.0663	20	SO	
Sulfate	891.4	5.00	100	830.4	61.0	80 - 120	890.8	0.064	20	SO	

The following samples were analyzed in this batch: HS22081730-01

Client: PDC Energy
Project: Kodak 34-44
WorkOrder: HS22081730

QC BATCH REPORT

Batch ID: R416816 (0)		Instrument: ManTech01		Method: ALKALINITY BY SM 2320B-2011					
MBLK	Sample ID: WBLKW1-220909	Units: mg/L		Analysis Date: 09-Sep-2022 10:50					
Client ID:	Run ID: ManTech01_416816	SeqNo: 6841442		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							

LCS	Sample ID: LCS1-220909	Units: mg/L		Analysis Date: 09-Sep-2022 10:58					
Client ID:	Run ID: ManTech01_416816	SeqNo: 6841443		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)	962.4	5.00	1000	0	96.2	85 - 115			
Alkalinity, Total (As CaCO3)	996.4	5.00	1000	0	99.6	85 - 115			

LCSD	Sample ID: LCSD1-220909	Units: mg/L		Analysis Date: 09-Sep-2022 11:07					
Client ID:	Run ID: ManTech01_416816	SeqNo: 6841444		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)	958.9	5.00	1000	0	95.9	85 - 115	962.4	0.366	20
Alkalinity, Total (As CaCO3)	993.6	5.00	1000	0	99.4	85 - 115	996.4	0.283	20

DUP	Sample ID: HS22090335-02DUP	Units: mg/L		Analysis Date: 09-Sep-2022 11:20					
Client ID:	Run ID: ManTech01_416816	SeqNo: 6841446		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)	124	5.00					124.2	0.161	20
Alkalinity, Carbonate (As CaCO3)	ND	5.00					0	0	20
Alkalinity, Total (As CaCO3)	124	5.00					124.2	0.161	20

The following samples were analyzed in this batch: HS22081730-01

Client: PDC Energy
Project: Kodak 34-44
WorkOrder: HS22081730

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	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

Acronym	Description
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

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

Sample Receipt Checklist

Work Order ID: HS22081730

Date/Time Received: 31-Aug-2022 09:15

Client Name: PDC Energy 80203

Received by: Corey Grandits

Completed By: <u>/S/ Corey Grandits</u>	31-Aug-2022 17:42	Reviewed by: <u>/S/ Kori Bagsby</u>	01-Sep-2022 09:27
eSignature	Date/Time	eSignature	Date/Time

Matrices: **W**Carrier 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):	3.9uc/3.7c IR31		
Cooler(s)/Kit(s):	Red		
Date/Time sample(s) sent to storage:	8/31/2022		
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:			

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

Corrective Action:

ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

[illegible]

*Time Zone (Circle): EST CST **MST** PST 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: Calcium, Chloride, Magnesium, Potassium, Sodium, Sulfate Samples analyzed per COGCC Bradenhead Sampling Program	Cations/Anions:				QC PACKAGE (check below)			
	Calcium, Chloride, Magnesium, Potassium, Sodium, Sulfate				LEVEL II (Standard QC)			
					LEVEL III (Std QC + forms)			
					LEVEL IV (Std QC + forms + raw data)			
					(blank)			
Preservative Key: 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	<i>[Signature]</i>	Jeff Braden	8/29/22	1455
RECEIVED BY	<i>[Signature]</i>	Karen Craven	8-29-22	1455
RELINQUISHED BY	<i>[Signature]</i>	Karen Craven	8-29-22	1530
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

