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December 07, 2022

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

Work Order: **HS22111203**

Laboratory Results for: **Postle IC 09-022HC**

Dear Jenifer Hakkarinen,

ALS Environmental received 1 sample(s) on Nov 19, 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
Tyler Monroe

Client: PDC Energy
Project: Postle IC 09-022HC
Work Order: HS22111203

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22111203-01	Postle IC 09-022HC	Water		15-Nov-2022 11:20	19-Nov-2022 09:15	<input type="checkbox"/>

Client: PDC Energy
Project: Postle IC 09-022HC
Work Order: HS22111203

CASE NARRATIVE

GC Semivolatiles by Method RSK-175

Batch ID: R422714

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

GC Semivolatiles by Method SW8015M

Batch ID: 186456

Sample ID: Postle IC 09-022HC (HS22111203-01)

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

GC Volatiles by Method SW8015

Batch ID: R422731

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

GCMS Volatiles by Method SW8260

Batch ID: R422621

Sample ID: HS22111143-04MS

- MS and MSD are for an unrelated sample

Sample ID: Postle IC 09-022HC (HS22111203-01)

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

Metals by Method E200.8

Batch ID: 186949

Sample ID: HS22111317-01MS/HS22111333MS

- MS and MSD are for an unrelated samples

WetChemistry by Method E300

Batch ID: R423239

Sample ID: Postle IC 09-022HC (HS22111203-01)

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

WetChemistry by Method SM2320B

Batch ID: R422786

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

WetChemistry by Method M2540C

Batch ID: R422474

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

Client: PDC Energy
 Project: Postle IC 09-022HC
 Sample ID: Postle IC 09-022HC
 Collection Date: 15-Nov-2022 11:20

ANALYTICAL REPORT

WorkOrder:HS22111203
 Lab ID:HS22111203-01
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		Method:SW8260		Analyst: AKP		
Benzene	52		10	ug/L	10	28-Nov-2022 15:57
Ethylbenzene	51		10	ug/L	10	28-Nov-2022 15:57
m,p-Xylene	210		20	ug/L	10	28-Nov-2022 15:57
o-Xylene	120		10	ug/L	10	28-Nov-2022 15:57
Toluene	180		10	ug/L	10	28-Nov-2022 15:57
Xylenes, Total	320		10	ug/L	10	28-Nov-2022 15:57
Surr: 1,2-Dichloroethane-d4	94.6		70-126	%REC	10	28-Nov-2022 15:57
Surr: 4-Bromofluorobenzene	103		77-113	%REC	10	28-Nov-2022 15:57
Surr: Dibromofluoromethane	109		77-123	%REC	10	28-Nov-2022 15:57
Surr: Toluene-d8	92.6		82-127	%REC	10	28-Nov-2022 15:57
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: FT		
Gasoline Range Organics	8.87		0.0500	mg/L	1	29-Nov-2022 12:43
Surr: 4-Bromofluorobenzene	101		70-123	%REC	1	29-Nov-2022 12:43
DISSOLVED GASES BY RSK-175		Method:RSK-175		Analyst: PPM		
Ethane	61.6		1.00	ug/L	1	23-Nov-2022 13:01
Methane	51.5		1.00	ug/L	2	23-Nov-2022 16:26
Propane	60.0		1.00	ug/L	1	23-Nov-2022 13:01
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3511 / 21-Nov-2022		Analyst: PPM
TPH (Diesel Range)	120		5.0	mg/L	100	22-Nov-2022 10:29
Surr: 2-Fluorobiphenyl	0	JS	60-135	%REC	100	22-Nov-2022 10:29
TOTAL METALS BY E200.8, REV 5.4, 1994		Method:E200.8		Prep:E200.8 / 05-Dec-2022		Analyst: JHD
Calcium	319		10.0	mg/L	20	07-Dec-2022 16:19
Magnesium	9.34		0.500	mg/L	1	07-Dec-2022 14:01
Potassium	198		10.0	mg/L	20	07-Dec-2022 16:19
Sodium	233		4.00	mg/L	20	07-Dec-2022 16:19
ANIONS BY E300.0, REV 2.1, 1993		Method:E300		Analyst: TH		
Chloride	848		20.0	mg/L	40	06-Dec-2022 02:14
Sulfate	ND		1.00	mg/L	2	06-Dec-2022 02:09
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		Method:M2540C		Analyst: CWG		
Total Dissolved Solids (Residue, Filterable)	2,280		10.0	mg/L	1	22-Nov-2022 11:39
ALKALINITY BY SM 2320B-2011		Method:SM2320B		Analyst: JAC		
Alkalinity, Bicarbonate (As CaCO3)	290		5.00	mg/L	1	29-Nov-2022 19:07
Alkalinity, Carbonate (As CaCO3)	37.3		5.00	mg/L	1	29-Nov-2022 19:07
Alkalinity, Total (As CaCO3)	327		5.00	mg/L	1	29-Nov-2022 19:07

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

Weight / Prep Log

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

Batch ID: 186456	Start Date: 21 Nov 2022 14:43	End Date: 21 Nov 2022 17:00
Method: SW3511	Prep Code: 3511_DRO	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22111203-01		33.19 (mL)	2 (mL)	0.06026	40 mL Amber

Batch ID: 186949	Start Date: 05 Dec 2022 10:00	End Date: 05 Dec 2022 14:00
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	
HS22111203-01		10 (mL)	10 (mL)	1	250 mL plastic, HNO3 to pH <2

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 186456 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Water	
HS22111203-01	Postle IC 09-022HC	15 Nov 2022 11:20		21 Nov 2022 14:43	22 Nov 2022 10:29	100
Batch ID: 186949 (0)		Test Name : TOTAL METALS BY E200.8, REV 5.4, 1994			Matrix: Water	
HS22111203-01	Postle IC 09-022HC	15 Nov 2022 11:20		05 Dec 2022 10:00	07 Dec 2022 16:19	20
HS22111203-01	Postle IC 09-022HC	15 Nov 2022 11:20		05 Dec 2022 10:00	07 Dec 2022 14:01	1
Batch ID: R422474 (0)		Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C-2011			Matrix: Water	
HS22111203-01	Postle IC 09-022HC	15 Nov 2022 11:20			22 Nov 2022 11:39	1
Batch ID: R422621 (0)		Test Name : LOW LEVEL VOLATILES BY SW8260C			Matrix: Water	
HS22111203-01	Postle IC 09-022HC	15 Nov 2022 11:20			28 Nov 2022 15:57	10
Batch ID: R422714 (0)		Test Name : DISSOLVED GASES BY RSK-175			Matrix: Water	
HS22111203-01	Postle IC 09-022HC	15 Nov 2022 11:20			23 Nov 2022 16:26	2
HS22111203-01	Postle IC 09-022HC	15 Nov 2022 11:20			23 Nov 2022 13:01	1
Batch ID: R422731 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Water	
HS22111203-01	Postle IC 09-022HC	15 Nov 2022 11:20			29 Nov 2022 12:43	1
Batch ID: R422786 (0)		Test Name : ALKALINITY BY SM 2320B-2011			Matrix: Water	
HS22111203-01	Postle IC 09-022HC	15 Nov 2022 11:20			29 Nov 2022 19:07	1
Batch ID: R423239 (0)		Test Name : ANIONS BY E300.0, REV 2.1, 1993			Matrix: Water	
HS22111203-01	Postle IC 09-022HC	15 Nov 2022 11:20			06 Dec 2022 02:14	40
HS22111203-01	Postle IC 09-022HC	15 Nov 2022 11:20			06 Dec 2022 02:09	2

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

QC BATCH REPORT

Batch ID: 186456 (0)	Instrument: FID-16	Method: TPH DRO/ORO BY SW8015C
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MBLK	Sample ID: MBLK-186456	Units: mg/L	Analysis Date: 21-Nov-2022 19:20							
Client ID:	Run ID: FID-16_422700	SeqNo: 7002669	PrepDate: 21-Nov-2022 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
TPH (Diesel Range)	ND	0.050								
<i>Surr: 2-Fluorobiphenyl</i>	<i>0.0419</i>	<i>0.0050</i>	<i>0.06</i>	<i>0</i>	<i>69.8</i>	<i>60 - 135</i>				

LCS	Sample ID: LCS-186456	Units: mg/L	Analysis Date: 21-Nov-2022 19:50							
Client ID:	Run ID: FID-16_422700	SeqNo: 7002717	PrepDate: 21-Nov-2022 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
TPH (Diesel Range)	0.533	0.050	0.6	0	88.8	70 - 130				
<i>Surr: 2-Fluorobiphenyl</i>	<i>0.06199</i>	<i>0.0050</i>	<i>0.06</i>	<i>0</i>	<i>103</i>	<i>60 - 135</i>				

LCSD	Sample ID: LCSD-186456	Units: mg/L	Analysis Date: 21-Nov-2022 20:19							
Client ID:	Run ID: FID-16_422700	SeqNo: 7002671	PrepDate: 21-Nov-2022 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
TPH (Diesel Range)	0.5345	0.050	0.6	0	89.1	70 - 130	0.533	0.282	20	
<i>Surr: 2-Fluorobiphenyl</i>	<i>0.06172</i>	<i>0.0050</i>	<i>0.06</i>	<i>0</i>	<i>103</i>	<i>60 - 135</i>	<i>0.06199</i>	<i>0.439</i>	<i>20</i>	

The following samples were analyzed in this batch: HS22111203-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

QC BATCH REPORT

Batch ID: R422714 (0) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

MBLK		Sample ID: MBLK-221123		Units: ug/L		Analysis Date: 23-Nov-2022 10:01				
Client ID:		Run ID: FID-4_422714		SeqNo: 7002907		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-221123		Units: ug/L		Analysis Date: 23-Nov-2022 10:20				
Client ID:		Run ID: FID-4_422714		SeqNo: 7002908		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	20.24	1.00	18.04	0	112	75 - 125				
Methane	8.799	0.500	9.647	0	91.2	75 - 125				
Propane	31.1	1.00	26.46	0	118	75 - 125				

LCSD		Sample ID: LCSD-221123		Units: ug/L		Analysis Date: 23-Nov-2022 10:37				
Client ID:		Run ID: FID-4_422714		SeqNo: 7002909		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	20.42	1.00	18.04	0	113	75 - 125	20.24	0.868	30	
Methane	8.273	0.500	9.647	0	85.8	75 - 125	8.799	6.16	30	
Propane	30.97	1.00	26.46	0	117	75 - 125	31.1	0.426	30	

The following samples were analyzed in this batch: HS22111203-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

QC BATCH REPORT

Batch ID: R422731 (0)		Instrument: FID-20		Method: GASOLINE RANGE ORGANICS BY SW8015C						
MBLK	Sample ID: MBLK-221129	Units: mg/L			Analysis Date: 29-Nov-2022 11:59					
Client ID:	Run ID: FID-20_422731	SeqNo: 7003365		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							
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.116</i>	<i>0.00500</i>	<i>0.1</i>	<i>0</i>	<i>116</i>	<i>70 - 121</i>			

LCS	Sample ID: LCS-221129	Units: mg/L			Analysis Date: 29-Nov-2022 11:31				
Client ID:	Run ID: FID-20_422731	SeqNo: 7003363		PrepDate:			DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Gasoline Range Organics	0.855	0.0500	1	0	85.5	76 - 124			
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.08929</i>	<i>0.00500</i>	<i>0.1</i>	<i>0</i>	<i>89.3</i>	<i>52 - 138</i>			

LCSD	Sample ID: LCSD-221129	Units: mg/L			Analysis Date: 29-Nov-2022 11:45				
Client ID:	Run ID: FID-20_422731	SeqNo: 7003364		PrepDate:			DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Gasoline Range Organics	0.8796	0.0500	1	0	88.0	76 - 124	0.855	2.84	20
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.0874</i>	<i>0.00500</i>	<i>0.1</i>	<i>0</i>	<i>87.4</i>	<i>52 - 138</i>	<i>0.08929</i>	<i>2.14</i>	<i>20</i>

The following samples were analyzed in this batch: HS22111203-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

QC BATCH REPORT

Batch ID: 186949 (0) **Instrument:** ICPMS07 **Method:** TOTAL METALS BY E200.8, REV 5.4, 1994

MBLK		Sample ID: MBLK-186949		Units: ug/L		Analysis Date: 07-Dec-2022 12:56			
Client ID:		Run ID: ICPMS07_423374		SeqNo: 7018874		PrepDate: 05-Dec-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-186949		Units: ug/L		Analysis Date: 07-Dec-2022 16:13			
Client ID:		Run ID: ICPMS07_423374		SeqNo: 7019246		PrepDate: 05-Dec-2022		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	5135	500	5000	0	103	85 - 115			
Magnesium	5259	500	5000	0	105	85 - 115			
Potassium	5096	500	5000	0	102	85 - 115			
Sodium	5171	200	5000	0	103	85 - 115			

MS		Sample ID: HS22111333-01MS		Units: ug/L		Analysis Date: 07-Dec-2022 13:09			
Client ID:		Run ID: ICPMS07_423374		SeqNo: 7018881		PrepDate: 05-Dec-2022		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	31780	500	5000	25110	133	70 - 130			SO
Magnesium	6633	500	5000	1437	104	70 - 130			
Potassium	8845	500	5000	3933	98.2	70 - 130			
Sodium	8458	200	5000	3362	102	70 - 130			

MS		Sample ID: HS22111317-01MS		Units: ug/L		Analysis Date: 07-Dec-2022 13:02			
Client ID:		Run ID: ICPMS07_423374		SeqNo: 7018877		PrepDate: 05-Dec-2022		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	302400	500	5000	307300	-97.4	70 - 130			SEO
Magnesium	37590	500	5000	33210	87.5	70 - 130			O
Potassium	45860	500	5000	42160	73.9	70 - 130			O
Sodium	349200	200	5000	354900	-113	70 - 130			SEO

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

QC BATCH REPORT

Batch ID: 186949 (0) **Instrument:** ICPMS07 **Method:** TOTAL METALS BY E200.8, REV 5.4, 1994

MSD		Sample ID: HS22111333-01MSD			Units: ug/L		Analysis Date: 07-Dec-2022 13:11			
Client ID:		Run ID: ICPMS07_423374			SeqNo: 7018882		PrepDate: 05-Dec-2022		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	30650	500	5000	25110	111	70 - 130	31780	3.62	20	O
Magnesium	6412	500	5000	1437	99.5	70 - 130	6633	3.39	20	
Potassium	8550	500	5000	3933	92.3	70 - 130	8845	3.39	20	
Sodium	8179	200	5000	3362	96.3	70 - 130	8458	3.36	20	

MSD		Sample ID: HS22111317-01MSD			Units: ug/L		Analysis Date: 07-Dec-2022 13:03			
Client ID:		Run ID: ICPMS07_423374			SeqNo: 7018878		PrepDate: 05-Dec-2022		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	307600	500	5000	307300	5.85	70 - 130	302400	1.69	20	SEO
Magnesium	38530	500	5000	33210	106	70 - 130	37590	2.47	20	O
Potassium	47040	500	5000	42160	97.6	70 - 130	45860	2.55	20	O
Sodium	358700	200	5000	354900	76.4	70 - 130	349200	2.68	20	EO

The following samples were analyzed in this batch: HS22111203-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

QC BATCH REPORT

Batch ID: R422621 (0) **Instrument:** VOA4 **Method:** LOW LEVEL VOLATILES BY SW8260C

MBLK		Sample ID: VBLKW-221128		Units: ug/L		Analysis Date: 28-Nov-2022 11:15			
Client ID:		Run ID: VOA4_422621		SeqNo: 7000492		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							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>43.52</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>87.0</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>49.94</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>99.9</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>51.39</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>103</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>47.47</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>94.9</i>	<i>81 - 120</i>			

LCS		Sample ID: VLCSW-221128		Units: ug/L		Analysis Date: 28-Nov-2022 09:36			
Client ID:		Run ID: VOA4_422621		SeqNo: 7000490		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	17.52	1.0	20	0	87.6	74 - 120			
Ethylbenzene	15.99	1.0	20	0	79.9	77 - 117			
m,p-Xylene	32.76	2.0	40	0	81.9	77 - 122			
o-Xylene	16.5	1.0	20	0	82.5	75 - 119			
Toluene	16.28	1.0	20	0	81.4	77 - 118			
Xylenes, Total	49.25	1.0	60	0	82.1	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>48.01</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>96.0</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>53.74</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>107</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>52.01</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>104</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>46.76</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>93.5</i>	<i>81 - 120</i>			

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

QC BATCH REPORT

Batch ID: R422621 (0)		Instrument: VOA4		Method: LOW LEVEL VOLATILES BY SW8260C						
MS	Sample ID: HS22111143-04MS	Units: ug/L			Analysis Date: 28-Nov-2022 13:00					
Client ID:	Run ID: VOA4_422621	SeqNo: 7000497		PrepDate:			DF: 100			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	3894	100	2000	2356	76.9	70 - 127				
Ethylbenzene	5309	100	2000	3931	68.9	70 - 124				S
m,p-Xylene	16200	200	4000	13450	68.9	70 - 130				S
o-Xylene	8691	100	2000	7299	69.6	70 - 124				S
Toluene	22060	100	2000	22910	-42.5	70 - 123				SEO
Xylenes, Total	24900	100	6000	20750	69.1	70 - 130				S
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>4646</i>	<i>100</i>	<i>5000</i>	<i>0</i>	<i>92.9</i>	<i>70 - 126</i>				
<i>Surr: 4-Bromofluorobenzene</i>	<i>5008</i>	<i>100</i>	<i>5000</i>	<i>0</i>	<i>100</i>	<i>77 - 113</i>				
<i>Surr: Dibromofluoromethane</i>	<i>5421</i>	<i>100</i>	<i>5000</i>	<i>0</i>	<i>108</i>	<i>77 - 123</i>				
<i>Surr: Toluene-d8</i>	<i>4733</i>	<i>100</i>	<i>5000</i>	<i>0</i>	<i>94.7</i>	<i>82 - 127</i>				

MSD	Sample ID: HS22111143-04MSD	Units: ug/L			Analysis Date: 28-Nov-2022 13:22					
Client ID:	Run ID: VOA4_422621	SeqNo: 7000498		PrepDate:			DF: 100			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	4613	100	2000	2356	113	70 - 127	3894	16.9	20	
Ethylbenzene	6276	100	2000	3931	117	70 - 124	5309	16.7	20	
m,p-Xylene	19290	200	4000	13450	146	70 - 130	16200	17.4	20	S
o-Xylene	10330	100	2000	7299	152	70 - 124	8691	17.3	20	S
Toluene	26180	100	2000	22910	164	70 - 123	22060	17.1	20	SEO
Xylenes, Total	29630	100	6000	20750	148	70 - 130	24900	17.4	20	S
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>4859</i>	<i>100</i>	<i>5000</i>	<i>0</i>	<i>97.2</i>	<i>70 - 126</i>	<i>4646</i>	<i>4.49</i>	<i>20</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>5240</i>	<i>100</i>	<i>5000</i>	<i>0</i>	<i>105</i>	<i>77 - 113</i>	<i>5008</i>	<i>4.52</i>	<i>20</i>	
<i>Surr: Dibromofluoromethane</i>	<i>5371</i>	<i>100</i>	<i>5000</i>	<i>0</i>	<i>107</i>	<i>77 - 123</i>	<i>5421</i>	<i>0.927</i>	<i>20</i>	
<i>Surr: Toluene-d8</i>	<i>4856</i>	<i>100</i>	<i>5000</i>	<i>0</i>	<i>97.1</i>	<i>82 - 127</i>	<i>4733</i>	<i>2.57</i>	<i>20</i>	

The following samples were analyzed in this batch: HS22111203-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

QC BATCH REPORT

Batch ID: R422474 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK	Sample ID: WBLK-112222	Units: mg/L		Analysis Date: 22-Nov-2022 11:39						
Client ID:	Run ID: Balance1_422474	SeqNo: 6997329		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-112222	Units: mg/L		Analysis Date: 22-Nov-2022 11:39						
Client ID:	Run ID: Balance1_422474	SeqNo: 6997330		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) 1054 10.0 1000 0 105 85 - 115

DUP	Sample ID: HS22111000-01DUP	Units: mg/L		Analysis Date: 22-Nov-2022 11:39						
Client ID:	Run ID: Balance1_422474	SeqNo: 6997317		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) 1990 10.0 1970 1.01 5

DUP	Sample ID: HS22110882-01DUP	Units: mg/L		Analysis Date: 22-Nov-2022 11:39						
Client ID:	Run ID: Balance1_422474	SeqNo: 6997311		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) 2230 10.0 2210 0.901 5

The following samples were analyzed in this batch: HS22111203-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

QC BATCH REPORT

Batch ID: R422786 (0)	Instrument: ManTech01	Method: ALKALINITY BY SM 2320B-2011
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MBLK	Sample ID: WBLKW1-112922	Units: mg/L	Analysis Date: 29-Nov-2022 18:13							
Client ID:	Run ID: ManTech01_422786	SeqNo: 7004966	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: LCS1-112922	Units: mg/L	Analysis Date: 29-Nov-2022 18:22							
Client ID:	Run ID: ManTech01_422786	SeqNo: 7004967	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)	992.7	5.00	1000	0	99.3	85 - 115				
Alkalinity, Total (As CaCO3)	1015	5.00	1000	0	102	85 - 115				

LCSD	Sample ID: LCSD1-112922	Units: mg/L	Analysis Date: 29-Nov-2022 18:31							
Client ID:	Run ID: ManTech01_422786	SeqNo: 7004968	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)	996	5.00	1000	0	99.6	85 - 115	992.7	0.331	20	
Alkalinity, Total (As CaCO3)	1017	5.00	1000	0	102	85 - 115	1015	0.194	20	

DUP	Sample ID: HS22110882-01DUP	Units: mg/L	Analysis Date: 29-Nov-2022 18:45							
Client ID:	Run ID: ManTech01_422786	SeqNo: 7004970	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)	194.8	5.00					179.2	8.3	20	
Alkalinity, Carbonate (As CaCO3)	ND	5.00					0	0	20	
Alkalinity, Total (As CaCO3)	194.8	5.00					179.2	8.3	20	

The following samples were analyzed in this batch: HS22111203-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

QC BATCH REPORT

Batch ID: R423239 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK		Sample ID: MBLK		Units: mg/L		Analysis Date: 05-Dec-2022 23:26				
Client ID:		Run ID: ICS-Integrion_423239		SeqNo: 7015290		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: 05-Dec-2022 23:32				
Client ID:		Run ID: ICS-Integrion_423239		SeqNo: 7015291		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.92	0.500	20	0	99.6	90 - 110				
Sulfate	20.88	0.500	20	0	104	90 - 110				

MS		Sample ID: HS22111578-02MS		Units: mg/L		Analysis Date: 06-Dec-2022 01:00				
Client ID:		Run ID: ICS-Integrion_423239		SeqNo: 7015306		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.937	0.500	10	0.116	98.2	80 - 120				
Sulfate	10.03	0.500	10	0	100	80 - 120				

MS		Sample ID: HS22111162-04MS		Units: mg/L		Analysis Date: 06-Dec-2022 00:29				
Client ID:		Run ID: ICS-Integrion_423239		SeqNo: 7015300		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	21.7	0.500	10	12.08	96.3	80 - 120				
Sulfate	27.12	0.500	10	17.4	97.2	80 - 120				

MSD		Sample ID: HS22111578-02MSD		Units: mg/L		Analysis Date: 06-Dec-2022 01:06				
Client ID:		Run ID: ICS-Integrion_423239		SeqNo: 7015307		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.803	0.500	10	0.116	96.9	80 - 120	9.937	1.36	20	
Sulfate	9.904	0.500	10	0	99.0	80 - 120	10.03	1.28	20	

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

QC BATCH REPORT

Batch ID: R423239 (0) Instrument: ICS-Integrion Method: ANIONS BY E300.0, REV 2.1, 1993

MSD Sample ID: HS22111162-04MSD Units: mg/L Analysis Date: 06-Dec-2022 00:34
Client ID: Run ID: ICS-Integrion_423239 SeqNo: 7015301 PrepDate: DF: 1
Analyte Result PQL SPK Val SPK Ref Value %REC Control Limit RPD Ref Value %RPD RPD Limit Qual

Chloride	21.9	0.500	10	12.08	98.2	80 - 120	21.7	0.881	20
Sulfate	27.32	0.500	10	17.4	99.2	80 - 120	27.12	0.733	20

The following samples were analyzed in this batch: HS22111203-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS22111203

**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: HS22111203

Date/Time Received: **19-Nov-2022 09:15**

Client Name: PDC Energy 80203

Received by: **Corey Grandits**

Completed By: <u>/S/ Corey Grandits</u>	19-Nov-2022 13:37	Reviewed by: <u>/S/ Tyler Monroe</u>	23-Nov-2022 09:19
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):	3.3UC/2.8C	IR31
Cooler(s)/Kit(s):	Lg Blue	
Date/Time sample(s) sent to storage:	11/19/2022	
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

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

Chain-of-Custody

Form 202r8

WORKORDER #	
PAGE	1 of 1

PROJECT NAME	PostleIC 09-022HC	SAMPLER	Jeff Braden				DATE	11/15/22				
PROJECT No.	09A2073175	FACILITY ID	23-47381				TURNAROUND	Standard				
COMPANY NAME	PDC Energy	EDD FORMAT	COGCC EDD, LTE				Dissolved Methane, Ethane, Propane BTEX & TPH GRC TPH DRG Alkalinity, Carbonate, Bicarbonate, Total Total Cations - see comments Total Anions - see comments Total Dissolved Solids	DISPOSAL	By Lab or Return to Client			
SEND REPORT TO	Jenifer Hakkarinen	PURCHASE ORDER	N/A					RSK 175				
ADDRESS	1775 Sherman Street, Suite 3000	BILL TO COMPANY	PDC Energy					SW8260_25				
CITY / STATE / ZIP	Denver, Colorado 80203	INVOICE ATTN TO	Jenifer Hakkarinen					SW8015M				
PHONE	303.860.5815	ADDRESS	1775 Sherman Street, Suite 3000					SM2320B				
FAX		CITY / STATE / ZIP	Denver, Colorado 80203					EPA200.7/240.8				
E-MAIL	jenifer.hakkarinen@pdce.com jessica.johannsen@pdce.com jbraden@ensolum.com	PHONE	303.860.5815					EPA 300.0				
		FAX						SM2540C				
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC					
	PostleIC 09 022HC	W	11/15/22	1020	11	1,3	-	X	X	X	X	

HS2211203

PDC Energy
PostleIC 09-022HS



*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:	Cations/Anions:	QC PACKAGE (check below)
Calcium, Chloride, Magnesium, Potassium, Sodium, Sulfate		<input type="checkbox"/> LEVEL II (Standard QC)
Samples analyzed per	1241 CF-0.5	<input type="checkbox"/> LEVEL III (Std QC + forms)
COGCC Bradenhead Sampling Program	Ch 257 7.2	<input type="checkbox"/> LEVEL IV (Std QC + forms + raw data)
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	11/17/22	0950
RECEIVED BY	<i>[Signature]</i>	Tyler Monroe	11/17/22	0950
RELINQUISHED BY	<i>[Signature]</i>	Tyler Monroe	11/17/22	1600
RECEIVED BY	<i>[Signature]</i>	CHRISTINA	11/19/22	0815
RELINQUISHED BY				
RECEIVED BY				

LG Bme

NOV 19 2022

ORIGIN ID: GMYA (970) 305-1648
AMY KEPHART
ALS
966 E 11TH ST
LOVELAND, CO 80537
UNITED STATES US

SHIP DATE: 19NOV22
ACTWT: 43.50 LB MAN
CAD: 0487862/CAFE3618
DIM3: 23x14x13 IN
BILL SENDER

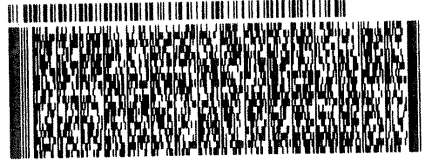
TO **SAMPLE RECEIVING**

ALS
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099

LG Bme

5856C-FE22-1328

TMU: PG1 DEPT1



FedEx
Express



FedEx
TRK# 6182 5243 3747
0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO SGRA

77099
TX-US IAH



*1882405 11/18 581J6/E488/FE2D