



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

February 21, 2023

Max Trehus
PDC Energy
4000 Burlington Ave.
Evans, CO 80620

Work Order: **HS23020331**

Laboratory Results for: **Postle IC 09-219HN**

Dear Max Trehus ,

ALS Environmental received 2 sample(s) on Feb 08, 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: JUMOKE.LAWAL
Tyler Monroe

Client: PDC Energy
Project: Postle IC 09-219HN
Work Order: HS23020331

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23020331-01	09-219HN A	Water		03-Feb-2023 08:35	08-Feb-2023 09:45	<input type="checkbox"/>
HS23020331-02	09-219HN B	Water		03-Feb-2023 08:35	08-Feb-2023 09:45	<input type="checkbox"/>

Client: PDC Energy
Project: Postle IC 09-219HN
Work Order: HS23020331

CASE NARRATIVE

GC Volatiles by Method SW8015

Batch ID: R427840

Sample ID: 09-219HN A (HS23020331-01)

- Surrogate failed outside control limits high due to sample matrix interference. This was confirmed by sample reanalysis.

GCMS Volatiles by Method SW8260

Batch ID: R427732

Sample ID: 09-219HN A (HS23020331-01)

- Lowest practical dilution due to foamy matrix and/or high concentration of non-target analyte(s). Surrogate 4-Bromofluorobenzene exceeded %recovery limits. Associated analytes are not reported.

Metals by Method E200.8

Batch ID: 189843

Sample ID: 09-219HN B (HS23020331-02)

- Sample ran at 10x due to sample matrix.

Sample ID: HS23020261-01MS

- MS and MSD are for an unrelated sample

Batch ID: 189862

Sample ID: HS23020679-01MS

- MS and MSD are for an unrelated sample

Sample ID: HS23020724-02MS

- MS and MSD are for an unrelated sample

WetChemistry by Method E300

Batch ID: R428317

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

WetChemistry by Method SM2320B

Batch ID: R428261

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

WetChemistry by Method M2540C

Batch ID: R427788

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

Client: PDC Energy
 Project: Postle IC 09-219HN
 Sample ID: 09-219HN A
 Collection Date: 03-Feb-2023 08:35

ANALYTICAL REPORT
 WorkOrder:HS23020331
 Lab ID:HS23020331-01
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		Method:SW8260		Analyst: AKP			
Benzene	1,900		100	500	ug/L	500	09-Feb-2023 16:14
Ethylbenzene	23,000		150	500	ug/L	500	09-Feb-2023 16:14
m,p-Xylene	57,000		250	1000	ug/L	500	09-Feb-2023 16:14
o-Xylene	28,000		150	500	ug/L	500	09-Feb-2023 16:14
Toluene	14,000		100	500	ug/L	500	09-Feb-2023 16:14
Xylenes, Total	85,000		150	500	ug/L	500	09-Feb-2023 16:14
Surr: 1,2-Dichloroethane-d4	98.9			70-126	%REC	500	09-Feb-2023 16:14
Surr: 4-Bromofluorobenzene	128	S		77-113	%REC	500	09-Feb-2023 16:14
Surr: Dibromofluoromethane	94.7			77-123	%REC	500	09-Feb-2023 16:14
Surr: Toluene-d8	97.6			82-127	%REC	500	09-Feb-2023 16:14
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: PJM			
Gasoline Range Organics	8,280		5.00	25.0	mg/L	500	10-Feb-2023 16:40
Surr: 4-Bromofluorobenzene	352	S		70-123	%REC	500	10-Feb-2023 16:40
TOTAL METALS BY E200.8, REV 5.4, 1994		Method:E200.8		Prep:E200.8 / 20-Feb-2023		Analyst: MSC	
Calcium	412		0.180	5.00	mg/L	1	20-Feb-2023 23:35
Magnesium	0.100	J	0.0780	5.00	mg/L	1	20-Feb-2023 23:35
Potassium	44.2		0.330	5.00	mg/L	1	20-Feb-2023 23:35
Sodium	91.1		0.210	2.00	mg/L	1	20-Feb-2023 23:35
ANIONS BY E300.0, REV 2.1, 1993		Method:E300		Analyst: TH			
Chloride	4,970		10.0	25.0	mg/L	50	17-Feb-2023 12:09
Sulfate	631		10.0	25.0	mg/L	50	17-Feb-2023 12:09
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		Method:M2540C		Analyst: DC			
Total Dissolved Solids (Residue, Filterable)	101,000		5.00	10.0	mg/L	1	10-Feb-2023 10:30
ALKALINITY BY SM 2320B-2011		Method:SM2320B		Analyst: JAC			
Alkalinity, Bicarbonate (As CaCO3)	1,470		50.0	50.0	mg/L	10	16-Feb-2023 19:14
Alkalinity, Carbonate (As CaCO3)	1,850		50.0	50.0	mg/L	10	16-Feb-2023 19:14
Alkalinity, Total (As CaCO3)	3,320		50.0	50.0	mg/L	10	16-Feb-2023 19:14

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

Client: PDC Energy
 Project: Postle IC 09-219HN
 Sample ID: 09-219HN B
 Collection Date: 03-Feb-2023 08:35

ANALYTICAL REPORT

WorkOrder:HS23020331
 Lab ID:HS23020331-02
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
DISSOLVED METALS BY E200.8, REV 5.4, Method:E200.8 (dissolved) 1994					Prep:E200.8 / 20-Feb-2023		Analyst: MSC
Calcium	3,560		1.80	50.0	mg/L	100	21-Feb-2023 15:38
Magnesium	0.368	J	0.0780	5.00	mg/L	10	20-Feb-2023 17:22
Potassium	370		0.330	5.00	mg/L	10	20-Feb-2023 17:22
Sodium	806		0.210	2.00	mg/L	10	20-Feb-2023 17:22

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

Weight / Prep Log

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

Batch ID: 189711	Start Date: 13 Feb 2023 10:00	End Date: 13 Feb 2023 17:00
Method: SAMPLE FILTRATION - 0.45 MICRON FILTER		Prep Code: FILTRATION

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23020331-02		100 (mL)	100 (mL)	1	250 mL plastic, Neat

Batch ID: 189843	Start Date: 20 Feb 2023 09:00	End Date: 20 Feb 2023 13:00
Method: DISSOLVED METALS DIGESTION BY E200.8,REV 5.4,1994		Prep Code: 200.8_DISSPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23020331-02		10 (mL)	10 (mL)	1	250 mL plastic, Neat

Batch ID: 189862	Start Date: 20 Feb 2023 13:00	End Date: 20 Feb 2023 17:00
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	
HS23020331-01		1 (mL)	10 (mL)	10	250 mL plastic, HNO3 to pH <2

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 189843 (0)		Test Name : DISSOLVED METALS BY E200.8, REV 5.4, 1994			Matrix: Water	
HS23020331-02	09-219HN B	03 Feb 2023 08:35		20 Feb 2023 09:00	21 Feb 2023 15:38	100
HS23020331-02	09-219HN B	03 Feb 2023 08:35		20 Feb 2023 09:00	20 Feb 2023 17:22	10
Batch ID: 189862 (0)		Test Name : TOTAL METALS BY E200.8, REV 5.4, 1994			Matrix: Water	
HS23020331-01	09-219HN A	03 Feb 2023 08:35		20 Feb 2023 13:00	20 Feb 2023 23:35	1
Batch ID: R427732 (0)		Test Name : LOW LEVEL VOLATILES BY SW8260C			Matrix: Water	
HS23020331-01	09-219HN A	03 Feb 2023 08:35			09 Feb 2023 16:14	500
Batch ID: R427788 (0)		Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C-2011			Matrix: Water	
HS23020331-01	09-219HN A	03 Feb 2023 08:35			10 Feb 2023 10:30	1
Batch ID: R427840 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Water	
HS23020331-01	09-219HN A	03 Feb 2023 08:35			10 Feb 2023 16:40	500
Batch ID: R428261 (0)		Test Name : ALKALINITY BY SM 2320B-2011			Matrix: Water	
HS23020331-01	09-219HN A	03 Feb 2023 08:35			16 Feb 2023 19:14	10
Batch ID: R428317 (0)		Test Name : ANIONS BY E300.0, REV 2.1, 1993			Matrix: Water	
HS23020331-01	09-219HN A	03 Feb 2023 08:35			17 Feb 2023 12:09	50

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

QC BATCH REPORT

Batch ID: R427840 (0)		Instrument: FID-20		Method: GASOLINE RANGE ORGANICS BY SW8015C						
MBLK	Sample ID: MBLK-230210	Units: mg/L			Analysis Date: 10-Feb-2023 11:37					
Client ID:	Run ID: FID-20_427840	SeqNo: 7120040		PrepDate:			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	

Gasoline Range Organics	U	0.0500							
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.08279</i>	<i>0.00500</i>	<i>0.1</i>	<i>0</i>	<i>82.8</i>	<i>70 - 121</i>			

LCS	Sample ID: LCS-230210	Units: mg/L			Analysis Date: 10-Feb-2023 11:10				
Client ID:	Run ID: FID-20_427840	SeqNo: 7120038		PrepDate:			DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Gasoline Range Organics	0.9717	0.0500	1	0	97.2	76 - 124			
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.0808</i>	<i>0.00500</i>	<i>0.1</i>	<i>0</i>	<i>80.8</i>	<i>52 - 138</i>			

LCSD	Sample ID: LCSD-230210	Units: mg/L			Analysis Date: 10-Feb-2023 11:24				
Client ID:	Run ID: FID-20_427840	SeqNo: 7120039		PrepDate:			DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Gasoline Range Organics	1.074	0.0500	1	0	107	76 - 124	0.9717	9.98	20
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.08018</i>	<i>0.00500</i>	<i>0.1</i>	<i>0</i>	<i>80.2</i>	<i>52 - 138</i>	<i>0.0808</i>	<i>0.764</i>	<i>20</i>

The following samples were analyzed in this batch: HS23020331-01

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

QC BATCH REPORT

Batch ID: 189843 (0)		Instrument: ICPMS06		Method: DISSOLVED METALS BY E200.8, REV 5.4, 1994 (DISSOLVED)						
MBLK	Sample ID: MBLK-189843	Units: ug/L		Analysis Date: 20-Feb-2023 17:10						
Client ID:	Run ID: ICPMS06_428359	SeqNo: 7136794		PrepDate: 20-Feb-2023			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	33.72	500								J
Magnesium	15.1	500								J
Potassium	U	500								
Sodium	25.3	200								J

LCS	Sample ID: LCS-189843	Units: ug/L		Analysis Date: 20-Feb-2023 17:14						
Client ID:	Run ID: ICPMS06_428359	SeqNo: 7136796		PrepDate: 20-Feb-2023			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	4807	500	5000	0	96.1	85 - 115				
Magnesium	4969	500	5000	0	99.4	85 - 115				
Potassium	4937	500	5000	0	98.7	85 - 115				
Sodium	5026	200	5000	0	101	85 - 115				

MS	Sample ID: HS23020261-01MS	Units: ug/L		Analysis Date: 20-Feb-2023 17:18						
Client ID:	Run ID: ICPMS06_428359	SeqNo: 7136798		PrepDate: 20-Feb-2023			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	86610	500	5000	82730	77.7	85 - 115				SO
Magnesium	11300	500	5000	6283	100	85 - 115				
Potassium	8463	500	5000	3544	98.4	85 - 115				
Sodium	51300	200	5000	46570	94.7	85 - 115				O

MSD	Sample ID: HS23020261-01MSD	Units: ug/L		Analysis Date: 20-Feb-2023 17:20						
Client ID:	Run ID: ICPMS06_428359	SeqNo: 7136799		PrepDate: 20-Feb-2023			DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	90300	500	5000	82730	151	85 - 115	86610	4.17	20	SO
Magnesium	11570	500	5000	6283	106	85 - 115	11300	2.39	20	
Potassium	8677	500	5000	3544	103	85 - 115	8463	2.5	20	
Sodium	53740	200	5000	46570	143	85 - 115	51300	4.63	20	SO

The following samples were analyzed in this batch: HS23020331-02

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

QC BATCH REPORT

Batch ID: 189862 (0) **Instrument:** ICPMS06 **Method:** TOTAL METALS BY E200.8, REV 5.4, 1994

MBLK		Sample ID: MBLK-189862		Units: ug/L		Analysis Date: 21-Feb-2023 15:36			
Client ID:		Run ID: ICPMS06_428460		SeqNo: 7138637		PrepDate: 20-Feb-2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	U	500							
Magnesium	U	500							
Potassium	U	500							
Sodium	U	200							

LCS		Sample ID: LCS-189862		Units: ug/L		Analysis Date: 20-Feb-2023 23:17			
Client ID:		Run ID: ICPMS06_428359		SeqNo: 7137650		PrepDate: 20-Feb-2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	4820	500	5000	0	96.4	85 - 115			
Magnesium	4953	500	5000	0	99.1	85 - 115			
Potassium	4902	500	5000	0	98.0	85 - 115			
Sodium	4945	200	5000	0	98.9	85 - 115			

MS		Sample ID: HS23020724-02MS		Units: ug/L		Analysis Date: 20-Feb-2023 23:27			
Client ID:		Run ID: ICPMS06_428359		SeqNo: 7137655		PrepDate: 20-Feb-2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	57210	500	5000	50310	138	70 - 130			SO
Magnesium	10010	500	5000	5344	93.3	70 - 130			
Potassium	5798	500	5000	1386	88.3	70 - 130			
Sodium	37850	200	5000	32310	111	70 - 130			O

MS		Sample ID: HS23020679-01MS		Units: ug/L		Analysis Date: 20-Feb-2023 23:21			
Client ID:		Run ID: ICPMS06_428359		SeqNo: 7137652		PrepDate: 20-Feb-2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	72260	500	5000	64790	149	70 - 130			SO
Magnesium	12770	500	5000	7014	115	70 - 130			
Potassium	33810	500	5000	27570	125	70 - 130			O
Sodium	517100	200	5000	491500	513	70 - 130			SEO

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

QC BATCH REPORT

Batch ID: 189862 (0) **Instrument:** ICPMS06 **Method:** TOTAL METALS BY E200.8, REV 5.4, 1994

MSD		Sample ID: HS23020724-02MSD			Units: ug/L		Analysis Date: 20-Feb-2023 23:29			
Client ID:		Run ID: ICPMS06_428359			SeqNo: 7137656		PrepDate: 20-Feb-2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	58420	500	5000	50310	162	70 - 130	57210	2.1	20	SO
Magnesium	10900	500	5000	5344	111	70 - 130	10010	8.5	20	
Potassium	6800	500	5000	1386	108	70 - 130	5798	15.9	20	
Sodium	38630	200	5000	32310	126	70 - 130	37850	2.04	20	O

MSD		Sample ID: HS23020679-01MSD			Units: ug/L		Analysis Date: 20-Feb-2023 23:23			
Client ID:		Run ID: ICPMS06_428359			SeqNo: 7137653		PrepDate: 20-Feb-2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	75630	500	5000	64790	217	70 - 130	72260	4.55	20	SO
Magnesium	12150	500	5000	7014	103	70 - 130	12770	4.96	20	
Potassium	35300	500	5000	27570	155	70 - 130	33810	4.3	20	SO
Sodium	543400	200	5000	491500	1040	70 - 130	517100	4.95	20	SEO

The following samples were analyzed in this batch: HS23020331-01

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

QC BATCH REPORT

Batch ID: R427732 (0) **Instrument:** VOA11 **Method:** LOW LEVEL VOLATILES BY SW8260C

MBLK		Sample ID: VBLKW-230209		Units: ug/L		Analysis Date: 09-Feb-2023 10:09			
Client ID:		Run ID: VOA11_427732		SeqNo: 7117791		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	U	1.0							
Ethylbenzene	U	1.0							
m,p-Xylene	U	2.0							
o-Xylene	U	1.0							
Toluene	U	1.0							
Xylenes, Total	U	1.0							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>47.05</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>94.1</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>50.7</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>101</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>50.33</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>101</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>48.77</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>97.5</i>	<i>81 - 120</i>			

LCS		Sample ID: VLCSW-230209		Units: ug/L		Analysis Date: 09-Feb-2023 09:27			
Client ID:		Run ID: VOA11_427732		SeqNo: 7117790		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	19.65	1.0	20	0	98.3	74 - 120			
Ethylbenzene	20.43	1.0	20	0	102	77 - 117			
m,p-Xylene	40.93	2.0	40	0	102	77 - 122			
o-Xylene	20.41	1.0	20	0	102	75 - 119			
Toluene	19.77	1.0	20	0	98.9	77 - 118			
Xylenes, Total	61.35	1.0	60	0	102	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>45.62</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>91.2</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>49.03</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>98.1</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>48.66</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>97.3</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>49.73</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>99.5</i>	<i>81 - 120</i>			

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

QC BATCH REPORT

Batch ID: R427732 (0) **Instrument:** VOA11 **Method:** LOW LEVEL VOLATILES BY SW8260C

MS		Sample ID: HS23011639-01MS			Units: ug/L		Analysis Date: 09-Feb-2023 18:46			
Client ID:		Run ID: VOA11_427732			SeqNo: 7117813		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.91	1.0	20	0	99.6	70 - 127				
Ethylbenzene	19.77	1.0	20	0	98.8	70 - 124				
m,p-Xylene	39.26	2.0	40	0	98.1	70 - 130				
o-Xylene	19.82	1.0	20	0	99.1	70 - 124				
Toluene	20.22	1.0	20	0	101	70 - 123				
Xylenes, Total	59.08	1.0	60	0	98.5	70 - 130				
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>43.9</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>87.8</i>	<i>70 - 126</i>				
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.88</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>97.8</i>	<i>77 - 113</i>				
<i>Surr: Dibromofluoromethane</i>	<i>46.64</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>93.3</i>	<i>77 - 123</i>				
<i>Surr: Toluene-d8</i>	<i>49.35</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>98.7</i>	<i>82 - 127</i>				

MSD		Sample ID: HS23011639-01MSD			Units: ug/L		Analysis Date: 09-Feb-2023 19:07			
Client ID:		Run ID: VOA11_427732			SeqNo: 7117814		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.65	1.0	20	0	93.2	70 - 127	19.91	6.56	20	
Ethylbenzene	18.78	1.0	20	0	93.9	70 - 124	19.77	5.11	20	
m,p-Xylene	37.05	2.0	40	0	92.6	70 - 130	39.26	5.78	20	
o-Xylene	18.85	1.0	20	0	94.3	70 - 124	19.82	5.02	20	
Toluene	19.13	1.0	20	0	95.7	70 - 123	20.22	5.54	20	
Xylenes, Total	55.9	1.0	60	0	93.2	70 - 130	59.08	5.53	20	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>43.34</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>86.7</i>	<i>70 - 126</i>	<i>43.9</i>	<i>1.28</i>	<i>20</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.53</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>97.1</i>	<i>77 - 113</i>	<i>48.88</i>	<i>0.727</i>	<i>20</i>	
<i>Surr: Dibromofluoromethane</i>	<i>46.66</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>93.3</i>	<i>77 - 123</i>	<i>46.64</i>	<i>0.0358</i>	<i>20</i>	
<i>Surr: Toluene-d8</i>	<i>48.61</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>97.2</i>	<i>82 - 127</i>	<i>49.35</i>	<i>1.51</i>	<i>20</i>	

The following samples were analyzed in this batch: HS23020331-01

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

QC BATCH REPORT

Batch ID: R427788 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK	Sample ID: WBLK-02102023	Units: mg/L		Analysis Date: 10-Feb-2023 10:30						
Client ID:	Run ID: Balance1_427788	SeqNo: 7119082		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) U 10.0

LCS	Sample ID: LCS-02102023	Units: mg/L		Analysis Date: 10-Feb-2023 10:30						
Client ID:	Run ID: Balance1_427788	SeqNo: 7119081		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) 1076 10.0 1000 0 108 85 - 115

DUP	Sample ID: HS23020172-05DUP	Units: mg/L		Analysis Date: 10-Feb-2023 10:30						
Client ID:	Run ID: Balance1_427788	SeqNo: 7119071		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) 190 10.0 190 0 5

DUP	Sample ID: HS23020172-01DUP	Units: mg/L		Analysis Date: 10-Feb-2023 10:30						
Client ID:	Run ID: Balance1_427788	SeqNo: 7119066		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) 150 10.0 150 0 5

The following samples were analyzed in this batch: HS23020331-01

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

QC BATCH REPORT

Batch ID: R428261 (0)	Instrument: Skalar 03	Method: ALKALINITY BY SM 2320B-2011
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MBLK	Sample ID: MBLK-R428261	Units: mg/L	Analysis Date: 16-Feb-2023 19:14							
Client ID:	Run ID: Skalar 03_428261	SeqNo: 7133469	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	U	5.00								
Alkalinity, Carbonate (As CaCO3)	U	5.00								
Alkalinity, Total (As CaCO3)	U	5.00								

LCS	Sample ID: LCS-R428261	Units: mg/L	Analysis Date: 16-Feb-2023 19:14							
Client ID:	Run ID: Skalar 03_428261	SeqNo: 7133468	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	992.2	5.00	1000	0	99.2	85 - 115				
Alkalinity, Total (As CaCO3)	1006	5.00	1000	0	101	85 - 115				

LCSD	Sample ID: LCSD-R428261	Units: mg/L	Analysis Date: 16-Feb-2023 19:14							
Client ID:	Run ID: Skalar 03_428261	SeqNo: 7133467	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	1004	5.00	1000	0	100	85 - 115	992.2	1.2	20	
Alkalinity, Total (As CaCO3)	1058	5.00	1000	0	106	85 - 115	1006	5.02	20	

DUP	Sample ID: HS23020776-03DUP	Units: mg/L	Analysis Date: 16-Feb-2023 19:14							
Client ID:	Run ID: Skalar 03_428261	SeqNo: 7133470	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	134.1	5.00					140.6	4.73	20	
Alkalinity, Carbonate (As CaCO3)	U	5.00					0	0	20	
Alkalinity, Total (As CaCO3)	134.1	5.00					140.6	4.73	20	

The following samples were analyzed in this batch: HS23020331-01

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

QC BATCH REPORT

Batch ID: R428317 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK		Sample ID: MBLK		Units: mg/L		Analysis Date: 17-Feb-2023 10:06			
Client ID:		Run ID: ICS-Integrion_428317		SeqNo: 7134582		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	U	0.500							
Sulfate	U	0.500							

LCS		Sample ID: LCS		Units: mg/L		Analysis Date: 17-Feb-2023 10:18			
Client ID:		Run ID: ICS-Integrion_428317		SeqNo: 7134583		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	20.35	0.500	20	0	102	90 - 110			
Sulfate	20.63	0.500	20	0	103	90 - 110			

MS		Sample ID: HS23020633-01MS		Units: mg/L		Analysis Date: 17-Feb-2023 10:59			
Client ID:		Run ID: ICS-Integrion_428317		SeqNo: 7134585		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	9.776	0.500	10	0.226	95.5	80 - 120			
Sulfate	9.902	0.500	10	0.096	98.1	80 - 120			

MS		Sample ID: HS23020511-05MS		Units: mg/L		Analysis Date: 17-Feb-2023 12:50			
Client ID:		Run ID: ICS-Integrion_428317		SeqNo: 7134600		PrepDate:		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	326.1	5.00	100	238.6	87.5	80 - 120			
Sulfate	100.1	5.00	100	1.471	98.6	80 - 120			

MSD		Sample ID: HS23020633-01MSD		Units: mg/L		Analysis Date: 17-Feb-2023 11:05			
Client ID:		Run ID: ICS-Integrion_428317		SeqNo: 7134586		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	9.805	0.500	10	0.226	95.8	80 - 120	9.776	0.296	20
Sulfate	9.918	0.500	10	0.096	98.2	80 - 120	9.902	0.165	20

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

QC BATCH REPORT

Batch ID: R428317 (0) Instrument: ICS-Integrion Method: ANIONS BY E300.0, REV 2.1, 1993

MSD Sample ID: HS23020511-05MSD Units: mg/L Analysis Date: 17-Feb-2023 12:55
Client ID: Run ID: ICS-Integrion_428317 SeqNo: 7134601 PrepDate: DF: 10
Analyte Result PQL SPK Val SPK Ref Value %REC Control Limit RPD Ref Value %RPD RPD Limit Qual

Chloride	323.2	5.00	100	238.6	84.6	80 - 120	326.1	0.884	20
Sulfate	99.37	5.00	100	1.471	97.9	80 - 120	100.1	0.708	20

The following samples were analyzed in this batch: HS23020331-01

Client: PDC Energy
Project: Postle IC 09-219HN
WorkOrder: HS23020331

**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
Date	
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	624-2023	31-Dec-2023
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: HS23020331

Date/Time Received: 08-Feb-2023 09:45

Client Name: PDC Energy 80620

Received by: Corey Grandits

Completed By: /S/ Corey Grandits	08-Feb-2023 11:39	Reviewed by: /S/ Tyler Monroe	08-Feb-2023 16:49
eSignature	Date/Time	eSignature	Date/Time

Matrices: **W**

Carrier name: **FedEx**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No
- 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):	5.6UC/5.1C	IR31
Cooler(s)/Kit(s):	48401	
Date/Time sample(s) sent to storage:	2/8/23	

- 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:



Chain of Custody Form

Page 1 of 1

HS23020331

PDC Energy
Postle IC 09-219HN

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Parameter Method Request for Analysis

ALS Project Manager:

Customer Information		Project Information		Parameters											
Purchase Order		Project Name	Postle IC 09-219HN	A	Dissolved Gases (Methane, Ethane, Propane)										
Work Order		Project Number		B	BTEX 8260										
Company Name	PDC Energy	Bill To Company	PDC Energy	C	DRO 8015										
Send Report To	Max Trehus	Invoice Attn.	Max Trehus	D	GRO 8015										
Address	4000 Burlington Ave	Address	1775 Sherman St #3000	E	Anions (Cl,SO4), Alk (T, CO3, HCO3), TDS										
				F	Dissolved Ca, Mg, K, Na - need to lab filter										
City/State/Zip	Evans, CO 80620	City/State/Zip	Denver, CO 80203	G	Total Ca, Mg, K, Na										
Phone	720-762-3569	Phone	303-860-5800	H											
Fax		Fax		I											
e-Mail Address	max.trehus@pdce.com jenifer.hakkarinen@pdce.com jessica.johannsen@pdce.com	e-Mail Address		J											

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	09-219HN A	02/03/23	8:35 AM	W	8	3	X										
2	09-219HN A	02/03/23	8:35 AM	W	1	3		X									
3	09-219HN A	02/03/23	8:35 AM	W	1	3			X								
4	09-219HN A	02/03/23	8:35 AM	W	1	3				X							
5	09-219HN A	02/03/23	8:35 AM	W	8	1					X						
6	09-219HN B	02/03/23	8:35 AM	W	8	1						X					
7	09-219HN A	02/03/23	8:35 AM	W	2	1							X				
8																	
9																	
10																	

Sampler(s): Please Print & Sign Max Trehus 2/3/2023			Shipment Method:		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour				Results Due Date:					
Max Trehus 2/3/2023		2/3/2023	11:07	Received by: <i>[Signature]</i>		2/3/23 1154	Notes: 48401						Facility ID: 456131	
Relinquished by: <i>[Signature]</i>		Date: 2/3/23	Time: 1600	Received by (Laboratory): <i>[Signature]</i>		2.4.23 12:05	Cooler Temp. 5.6°		QC Package: (Check Box Below)					
Logged by (Laboratory):		Date:	Time:	Checked by (Laboratory): <i>[Signature]</i>		2-8-23 10:55			<input checked="" type="checkbox"/> Level II: Standard QC		TRRP-Checklist			
									<input type="checkbox"/> Level III: Std QC + Raw Data		TRRP Level IV			
									<input type="checkbox"/> Level IV: SW846 CLP-Like					
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035										Other: _____				

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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Handwritten notes and signatures:
77256
2/3/23
COC-05
2-8-23

48401

FEB 08 2023

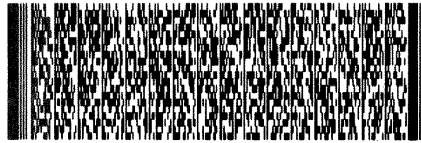
ORIGIN ID: 6KYA (970) 305-1648
AMY KEPHART
ALS
965 E 11TH ST
LOVELAND, CO 80537
UNITED STATES US

SHIP DATE: 06FEB23
ACTWT: 10.80 LB
CAD: 0487862/CAF3618
DIMS: 13x8x8 IN
BILL THIRD PARTY

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

48401

REF: PDC



TRK# 6182 5243 5496
0201

TUE - 07 FEB 10:30A
PRIORITY OVERNIGHT

FedEx label TUE - 07 FEB
Received 02/08/23

XA SGRA

77099
TX-US IAH

Print # 197077-494-MTW-EXP 0622 **

