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

April 01, 2024

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

Work Order: **HS24031318**

Laboratory Results for: **Bernhardt 31-1**

Dear Jessica Johannsen,

ALS Environmental received 1 sample(s) on Mar 22, 2024 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
Tyler Monroe

Client: PDC Energy
Project: Bernhardt 31-1
Work Order: HS24031318

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS24031318-01	Bernhardt 31-1	Water		20-Mar-2024 14:00	22-Mar-2024 09:30	☐

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy **CASE NARRATIVE**
Project: Bernhardt 31-1
Work Order: HS24031318

GC Semivolatiles by Method RSK-175

Batch ID: R462316

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

GC Semivolatiles by Method SW8015M

Batch ID: 209385

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

GC Volatiles by Method SW8015

Batch ID: R462711

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

GCMS Volatiles by Method SW8260

Batch ID: R462067

Sample ID: Bernhardt 31-1 (HS24031318-01)

• Lowest possible dilution due to sample matrix.

Sample ID: VLCSW-240324

• Insufficient sample received to perform MS/MSD. An LCS/LCSD was performed as batch quality control.

Metals by Method E200.8

Batch ID: 209445

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

WetChemistry by Method E300

Batch ID: R462368

Sample ID: HS24031315-01MS

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

WetChemistry by Method M2540C

Batch ID: R462273

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

WetChemistry by Method SM2320B

Batch ID: R462259

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
Sample ID: Bernhardt 31-1
Collection Date: 20-Mar-2024 14:00

ANALYTICAL REPORT
WorkOrder:HS24031318
Lab ID:HS24031318-01
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: TS
Benzene	ND		500	ug/L	500	25-Mar-2024 05:42
Ethylbenzene	ND		500	ug/L	500	25-Mar-2024 05:42
m,p-Xylene	ND		1000	ug/L	500	25-Mar-2024 05:42
o-Xylene	ND		500	ug/L	500	25-Mar-2024 05:42
Toluene	ND		500	ug/L	500	25-Mar-2024 05:42
Xylenes, Total	ND		1500	ug/L	500	25-Mar-2024 05:42
Surr: 1,2-Dichloroethane-d4	*81.6*		*70-126*	*%REC*	*500*	*25-Mar-2024 05:42*
Surr: 4-Bromofluorobenzene	*85.9*		*77-113*	*%REC*	*500*	*25-Mar-2024 05:42*
Surr: Dibromofluoromethane	*81.2*		*77-123*	*%REC*	*500*	*25-Mar-2024 05:42*
Surr: Toluene-d8	*88.2*		*82-127*	*%REC*	*500*	*25-Mar-2024 05:42*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: TS
Gasoline Range Organics	**197**		**25.0**	**mg/L**	500	29-Mar-2024 21:13
Surr: 4-Bromofluorobenzene	*108*		*70-123*	*%REC*	*500*	*29-Mar-2024 21:13*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**				Analyst: E.H.
Ethane	**1,330**		**500**	**ug/L**	500	26-Mar-2024 16:15
Methane	**8,080**		**250**	**ug/L**	500	26-Mar-2024 16:15
Propane	**1,080**		**500**	**ug/L**	500	26-Mar-2024 16:15
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3511 / 25-Mar-2024		Analyst: SAM
TPH (Diesel Range)	**0.34**		**0.051**	**mg/L**	1	26-Mar-2024 01:31
Surr: 2-Fluorobiphenyl	*76.0*		*60-135*	*%REC*	*1*	*26-Mar-2024 01:31*
TOTAL METALS BY E200.8, REV 5.4, 1994		**Method:E200.8**		Prep:E200.8 / 26-Mar-2024		Analyst: JC
Calcium	**5.05**		**0.500**	**mg/L**	1	28-Mar-2024 14:53
Magnesium	**0.650**		**0.500**	**mg/L**	1	28-Mar-2024 14:53
Potassium	**1.86**		**0.500**	**mg/L**	1	28-Mar-2024 14:53
Sodium	**376**		**1.00**	**mg/L**	5	28-Mar-2024 15:18
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**				Analyst: TH
Chloride	**441**		**5.00**	**mg/L**	10	27-Mar-2024 13:40
Sulfate	ND		0.500	mg/L	1	27-Mar-2024 13:35
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**				Analyst: HB
Total Dissolved Solids (Residue, Filterable)	**1,070**		**10.0**	**mg/L**	1	25-Mar-2024 08:46
ALKALINITY BY -2011		**Method:SM2320B**				Analyst: JAC
Alkalinity, Bicarbonate (As CaCO3)	**225**		**5.00**	**mg/L**	1	26-Mar-2024 14:45
Alkalinity, Carbonate (As CaCO3)	**91.4**		**5.00**	**mg/L**	1	26-Mar-2024 14:45
Alkalinity, Total (As CaCO3)	**316**		**5.00**	**mg/L**	1	26-Mar-2024 14:45

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

RIGHT SOLUTIONS | RIGHT PARTNER

Weight / Prep Log

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

Batch ID: 209385 **Start Date:** 25 Mar 2024 10:00 **End Date:** 25 Mar 2024 10:00
Method: SW3511 **Prep Code:** 3511_DRO

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS24031318-01		32.4 (mL)	2 (mL)	0.06173	40 mL Amber

Batch ID: 209445 **Start Date:** 26 Mar 2024 14:30 **End Date:** 26 Mar 2024 14:30
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	
HS24031318-01		10 (mL)	10 (mL)	1	250 mL plastic, HNO3 to pH <2

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 209385 (0)	**Test Name :** TPH DRO/ORO BY SW8015C				**Matrix:** Water	
HS24031318-01	Bernhardt 31-1	20 Mar 2024 14:00		25 Mar 2024 10:00	26 Mar 2024 01:31	1
Batch ID: 209445 (0)	**Test Name :** TOTAL METALS BY E200.8, REV 5.4, 1994				**Matrix:** Water	
HS24031318-01	Bernhardt 31-1	20 Mar 2024 14:00		26 Mar 2024 14:30	28 Mar 2024 15:18	5
HS24031318-01	Bernhardt 31-1	20 Mar 2024 14:00		26 Mar 2024 14:30	28 Mar 2024 14:53	1
Batch ID: R462067 (0)	**Test Name :** LOW LEVEL VOLATILES BY SW8260C				**Matrix:** Water	
HS24031318-01	Bernhardt 31-1	20 Mar 2024 14:00			25 Mar 2024 05:42	500
Batch ID: R462259 (0)	**Test Name :** ALKALINITY BY -2011				**Matrix:** Water	
HS24031318-01	Bernhardt 31-1	20 Mar 2024 14:00			26 Mar 2024 14:45	1
Batch ID: R462273 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS24031318-01	Bernhardt 31-1	20 Mar 2024 14:00			25 Mar 2024 08:46	1
Batch ID: R462316 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Water	
HS24031318-01	Bernhardt 31-1	20 Mar 2024 14:00			26 Mar 2024 16:15	500
Batch ID: R462368 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS24031318-01	Bernhardt 31-1	20 Mar 2024 14:00			27 Mar 2024 13:40	10
HS24031318-01	Bernhardt 31-1	20 Mar 2024 14:00			27 Mar 2024 13:35	1
Batch ID: R462711 (0)	**Test Name :** GASOLINE RANGE ORGANICS BY SW8015C				**Matrix:** Water	
HS24031318-01	Bernhardt 31-1	20 Mar 2024 14:00			29 Mar 2024 21:13	500

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

QC BATCH REPORT

Batch ID: 209385 (0) **Instrument: FID-16** **Method: TPH DRO/ORO BY SW8015C**

MBLK Sample ID: **MBLK-209385** Units: **mg/L** Analysis Date: **25-Mar-2024 16:07**
Client ID: Run ID: **FID-16_462436** SeqNo: **7913130** PrepDate: **25-Mar-2024** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	ND	0.050								
Surr: 2-Fluorobiphenyl	*0.06257*	*0.0050*	*0.06*	*0*	*104*	*60 - 135*				

LCS Sample ID: **LCS-209385** Units: **mg/L** Analysis Date: **25-Mar-2024 16:37**
Client ID: Run ID: **FID-16_462436** SeqNo: **7913131** PrepDate: **25-Mar-2024** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	0.6593	0.050	0.6	0	110	70 - 130				
Surr: 2-Fluorobiphenyl	*0.05341*	*0.0050*	*0.06*	*0*	*89.0*	*60 - 135*				

MS Sample ID: **HS24031062-01MS** Units: **mg/L** Analysis Date: **25-Mar-2024 17:36**
Client ID: Run ID: **FID-16_462436** SeqNo: **7913133** PrepDate: **25-Mar-2024** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	0.7258	0.051	0.6143	0.04228	111	70 - 130				
Surr: 2-Fluorobiphenyl	*0.04574*	*0.0051*	*0.06143*	*0*	*74.5*	*60 - 135*				

MSD Sample ID: **HS24031062-01MSD** Units: **mg/L** Analysis Date: **25-Mar-2024 18:06**
Client ID: Run ID: **FID-16_462436** SeqNo: **7913134** PrepDate: **25-Mar-2024** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	0.7449	0.052	0.6199	0.04228	113	70 - 130	0.7258	2.6	20	
Surr: 2-Fluorobiphenyl	*0.05125*	*0.0052*	*0.06199*	*0*	*82.7*	*60 - 135*	*0.04574*	*11.4*	*20*	

The following samples were analyzed in this batch: HS24031318-01

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

QC BATCH REPORT

Batch ID: R462316 (0) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

MBLK Sample ID: **MBLK-240326** Units: **ug/L** Analysis Date: **26-Mar-2024 09:21**
Client ID: Run ID: **FID-4_462316** SeqNo: **7910469** 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	1.50								

LCS Sample ID: **LCS-240326** Units: **ug/L** Analysis Date: **26-Mar-2024 09:36**
Client ID: Run ID: **FID-4_462316** SeqNo: **7910470** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	16.34	1.00	18.04	0	90.5	75 - 125				
Methane	9.08	0.500	9.647	0	94.1	75 - 125				
Propane	24.31	1.50	26.46	0	91.9	75 - 125				

LCSD Sample ID: **LCSD-240326** Units: **ug/L** Analysis Date: **26-Mar-2024 10:07**
Client ID: Run ID: **FID-4_462316** SeqNo: **7910471** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	17.38	1.00	18.04	0	96.3	75 - 125	16.34	6.2	30	
Methane	9.486	0.500	9.647	0	98.3	75 - 125	9.08	4.37	30	
Propane	25.27	1.50	26.46	0	95.5	75 - 125	24.31	3.88	30	

The following samples were analyzed in this batch: HS24031318-01

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

QC BATCH REPORT

Batch ID: R462711 (0) **Instrument:** FID-20 **Method:** GASOLINE RANGE ORGANICS BY SW8015C

MBLK Sample ID: **MBLK-240329** Units: **mg/L** Analysis Date: **29-Mar-2024 17:18**
Client ID: Run ID: **FID-20_462711** SeqNo: **7918971** 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	*0.1029*	*0.00500*	*0.1*	*0*	*103*	*70 - 121*				

LCS Sample ID: **LCS-240329** Units: **mg/L** Analysis Date: **29-Mar-2024 16:50**
Client ID: Run ID: **FID-20_462711** SeqNo: **7918969** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.023	0.0500	1	0	102	76 - 124				
Surr: 4-Bromofluorobenzene	*0.09525*	*0.00500*	*0.1*	*0*	*95.2*	*52 - 138*				

LCSD Sample ID: **LCSD-240329** Units: **mg/L** Analysis Date: **29-Mar-2024 17:04**
Client ID: Run ID: **FID-20_462711** SeqNo: **7918970** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.046	0.0500	1	0	105	76 - 124	1.023	2.23	20	
Surr: 4-Bromofluorobenzene	*0.09468*	*0.00500*	*0.1*	*0*	*94.7*	*52 - 138*	*0.09525*	*0.598*	*20*	

The following samples were analyzed in this batch: HS24031318-01

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

QC BATCH REPORT

Batch ID: 209445 (0) **Instrument: ICPMS06** **Method: TOTAL METALS BY E200.8, REV 5.4, 1994**

MBLK Sample ID: **MBLK-209445** Units: **ug/L** Analysis Date: **28-Mar-2024 12:31**
Client ID: Run ID: **ICPMS06_462409** SeqNo: **7913466** PrepDate: **26-Mar-2024** 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-209445** Units: **ug/L** Analysis Date: **28-Mar-2024 12:33**
Client ID: Run ID: **ICPMS06_462409** SeqNo: **7913467** PrepDate: **26-Mar-2024** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	5021	500	5000	0	100	85 - 115				
Magnesium	5263	500	5000	0	105	85 - 115				
Potassium	5076	500	5000	0	102	85 - 115				
Sodium	5301	200	5000	0	106	85 - 115				

MS Sample ID: **HS24031368-01MS** Units: **ug/L** Analysis Date: **28-Mar-2024 12:42**
Client ID: Run ID: **ICPMS06_462409** SeqNo: **7913472** PrepDate: **26-Mar-2024** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	8462	500	5000	3877	91.7	70 - 130				
Magnesium	5242	500	5000	149.3	102	70 - 130				
Potassium	5079	500	5000	157.1	98.4	70 - 130				
Sodium	5519	200	5000	718.9	96.0	70 - 130				

MS Sample ID: **HS24031366-01MS** Units: **ug/L** Analysis Date: **28-Mar-2024 12:36**
Client ID: Run ID: **ICPMS06_462409** SeqNo: **7913469** PrepDate: **26-Mar-2024** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	79240	500	5000	74010	105	70 - 130				O
Magnesium	31740	500	5000	26050	114	70 - 130				O
Potassium	13300	500	5000	8469	96.7	70 - 130				
Sodium	245700	200	5000	240900	96.1	70 - 130				EO

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

QC BATCH REPORT

Batch ID: 209445 (0) **Instrument: ICPMS06** **Method: TOTAL METALS BY E200.8, REV 5.4, 1994**

MSD Sample ID: **HS24031368-01MSD** Units: **ug/L** Analysis Date: **28-Mar-2024 12:44**
Client ID: Run ID: **ICPMS06_462409** SeqNo: **7913473** PrepDate: **26-Mar-2024** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	8542	500	5000	3877	93.3	70 - 130	8462	0.948	20	
Magnesium	5204	500	5000	149.3	101	70 - 130	5242	0.715	20	
Potassium	5068	500	5000	157.1	98.2	70 - 130	5079	0.22	20	
Sodium	5516	200	5000	718.9	95.9	70 - 130	5519	0.0645	20	

MSD Sample ID: **HS24031366-01MSD** Units: **ug/L** Analysis Date: **28-Mar-2024 12:38**
Client ID: Run ID: **ICPMS06_462409** SeqNo: **7913470** PrepDate: **26-Mar-2024** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	78570	500	5000	74010	91.2	70 - 130	79240	0.85	20	O
Magnesium	31410	500	5000	26050	107	70 - 130	31740	1.06	20	O
Potassium	13480	500	5000	8469	100	70 - 130	13300	1.28	20	
Sodium	244400	200	5000	240900	70.3	70 - 130	245700	0.527	20	EO

The following samples were analyzed in this batch: HS24031318-01

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

QC BATCH REPORT

Batch ID: R462067 (0) **Instrument: VOA9** **Method: LOW LEVEL VOLATILES BY SW8260C**

MBLK Sample ID: **VBLKW-240324** Units: **ug/L** Analysis Date: **25-Mar-2024 00:26**
Client ID: Run ID: **VOA9_462067** SeqNo: **7904783** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
m,p-Xylene	ND	2.0								
o-Xylene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 1,2-Dichloroethane-d4	*40.83*	*1.0*	*50*	*0*	*81.7*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*42.57*	*1.0*	*50*	*0*	*85.1*	*77 - 113*				
Surr: Dibromofluoromethane	*40.82*	*1.0*	*50*	*0*	*81.6*	*73 - 126*				
Surr: Toluene-d8	*43.44*	*1.0*	*50*	*0*	*86.9*	*81 - 120*				

LCS Sample ID: **VLCSW-240324** Units: **ug/L** Analysis Date: **24-Mar-2024 23:19**
Client ID: Run ID: **VOA9_462067** SeqNo: **7904781** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.44	1.0	20	0	87.2	74 - 120				
Ethylbenzene	17.64	1.0	20	0	88.2	77 - 117				
m,p-Xylene	35.45	2.0	40	0	88.6	77 - 122				
o-Xylene	17.77	1.0	20	0	88.9	75 - 119				
Toluene	17.08	1.0	20	0	85.4	77 - 118				
Xylenes, Total	53.22	3.0	60	0	88.7	75 - 122				
Surr: 1,2-Dichloroethane-d4	*40.74*	*1.0*	*50*	*0*	*81.5*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*45.25*	*1.0*	*50*	*0*	*90.5*	*77 - 113*				
Surr: Dibromofluoromethane	*43.1*	*1.0*	*50*	*0*	*86.2*	*73 - 126*				
Surr: Toluene-d8	*43.8*	*1.0*	*50*	*0*	*87.6*	*81 - 120*				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

QC BATCH REPORT

Batch ID: R462067 (0) **Instrument: VOA9** **Method: LOW LEVEL VOLATILES BY SW8260C**

LCSD Sample ID: **VLCSDW-240324** Units: **ug/L** Analysis Date: **24-Mar-2024 23:41**
Client ID: Run ID: **VOA9_462067** SeqNo: **7904782** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Benzene	16.69	1.0	20	0	83.5	74 - 120	17.44	4.38	20	
Ethylbenzene	16.41	1.0	20	0	82.1	77 - 117	17.64	7.25	20	
m,p-Xylene	33.09	2.0	40	0	82.7	77 - 122	35.45	6.87	20	
o-Xylene	15.98	1.0	20	0	79.9	75 - 119	17.77	10.7	20	
Toluene	15.71	1.0	20	0	78.5	77 - 118	17.08	8.39	20	
Xylenes, Total	49.07	3.0	60	0	81.8	75 - 122	53.22	8.12	20	
Surr: 1,2-Dichloroethane-d4	*40.1*	*1.0*	*50*	*0*	*80.2*	*70 - 123*	*40.74*	*1.57*	*20*	
Surr: 4-Bromofluorobenzene	*44.91*	*1.0*	*50*	*0*	*89.8*	*77 - 113*	*45.25*	*0.756*	*20*	
Surr: Dibromofluoromethane	*41.14*	*1.0*	*50*	*0*	*82.3*	*73 - 126*	*43.1*	*4.65*	*20*	
Surr: Toluene-d8	*43.73*	*1.0*	*50*	*0*	*87.5*	*81 - 120*	*43.8*	*0.144*	*20*	

The following samples were analyzed in this batch: HS24031318-01

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

QC BATCH REPORT

Batch ID: R462259 (0) **Instrument: Skalar 03** **Method: ALKALINITY BY -2011**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **26-Mar-2024 12:29**
Client ID: Run ID: **Skalar 03_462259** SeqNo: **7908965** 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: **LCS 03262024** Units: **mg/L** Analysis Date: **26-Mar-2024 12:35**
Client ID: Run ID: **Skalar 03_462259** SeqNo: **7908966** 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)	924	5.00	1000	0	92.4	85 - 115				
Alkalinity, Total (As CaCO3)	929	5.00	1000	0	92.9	85 - 115				

LCSD Sample ID: **LCSD 03262024** Units: **mg/L** Analysis Date: **26-Mar-2024 12:41**
Client ID: Run ID: **Skalar 03_462259** SeqNo: **7908967** 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)	917.4	5.00	1000	0	91.7	85 - 115	924	0.717	20	
Alkalinity, Total (As CaCO3)	925.4	5.00	1000	0	92.5	85 - 115	929	0.388	20	

DUP Sample ID: **HS24031345-01 DUP** Units: **mg/L** Analysis Date: **26-Mar-2024 13:12**
Client ID: Run ID: **Skalar 03_462259** SeqNo: **7908957** 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)	293.5	5.00					297.8	1.45	20	
Alkalinity, Carbonate (As CaCO3)	ND	5.00					0	0	20	
Alkalinity, Total (As CaCO3)	293.5	5.00					297.8	1.45	20	

The following samples were analyzed in this batch: HS24031318-01

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

QC BATCH REPORT

Batch ID: R462273 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WMBLK-03252024** Units: **mg/L** Analysis Date: **25-Mar-2024 08:46**
Client ID: Run ID: **Balance1_462273** SeqNo: **7909606** 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-03252024** Units: **mg/L** Analysis Date: **25-Mar-2024 08:46**
Client ID: Run ID: **Balance1_462273** SeqNo: **7909605** 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)	962	10.0	1000	0	96.2	85 - 115				

DUP Sample ID: **HS24031320-01DUP** Units: **mg/L** Analysis Date: **25-Mar-2024 08:46**
Client ID: Run ID: **Balance1_462273** SeqNo: **7909596** 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)	1946	10.0					1938	0.412	20	

DUP Sample ID: **HS24031317-01DUP** Units: **mg/L** Analysis Date: **25-Mar-2024 08:46**
Client ID: Run ID: **Balance1_462273** SeqNo: **7909593** 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)	818	10.0					792	3.23	20	

The following samples were analyzed in this batch: HS24031318-01

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

QC BATCH REPORT

Batch ID: R462368 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY E300.0, REV 2.1, 1993**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **27-Mar-2024 11:36**
Client ID: Run ID: **ICS-Integrion_462368** SeqNo: **7911965** 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: **27-Mar-2024 11:42**
Client ID: Run ID: **ICS-Integrion_462368** SeqNo: **7911966** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.94	0.500	20	0	105	90 - 110				
Sulfate	21.36	0.500	20	0	107	90 - 110				

MS Sample ID: **HS24031559-01MS** Units: **mg/L** Analysis Date: **27-Mar-2024 12:00**
Client ID: Run ID: **ICS-Integrion_462368** SeqNo: **7911969** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	176.8	2.50	50	130.8	92.1	80 - 120				
Sulfate	97.64	2.50	50	48.58	98.1	80 - 120				

MS Sample ID: **HS24031315-01MS** Units: **mg/L** Analysis Date: **27-Mar-2024 13:11**
Client ID: Run ID: **ICS-Integrion_462368** SeqNo: **7911978** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	643.4	5.00	100	588.3	55.1	80 - 120				SO
Sulfate	101.4	5.00	100	0	101	80 - 120				

MSD Sample ID: **HS24031559-01MSD** Units: **mg/L** Analysis Date: **27-Mar-2024 12:06**
Client ID: Run ID: **ICS-Integrion_462368** SeqNo: **7911970** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	176	2.50	50	130.8	90.4	80 - 120	176.8	0.476	20	
Sulfate	97.15	2.50	50	48.58	97.1	80 - 120	97.64	0.496	20	

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: HS24031318

QC BATCH REPORT

Batch ID: R462368 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY E300.0, REV 2.1, 1993**

MSD Sample ID: **HS24031315-01MSD** Units: **mg/L** Analysis Date: **27-Mar-2024 13:17**
Client ID: Run ID: **ICS-Integrion_462368** SeqNo: **7911979** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	635.1	5.00	100	588.3	46.8	80 - 120	643.4	1.3	20	SO
Sulfate	101.8	5.00	100	0	102	80 - 120	101.4	0.448	20	

The following samples were analyzed in this batch: HS24031318-01

RIGHT SOLUTIONS | RIGHT PARTNER

Client: PDC Energy
Project: Bernhardt 31-1
WorkOrder: **HS24031318**

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 Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919; 2024	30-Apr-2024
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624 - 2024	31-Dec-2024
North Dakota	R-193 2023-2024	30-Apr-2024
Oklahoma	2023-140	31-Aug-2024
Texas	T104704231-23-32	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

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Sample Receipt Checklist

Work Order ID: HS24031318 **Date/Time Received:** **22-Mar-2024 09:30**

Client Name: PDC Energy 80203 **Received by:** **Paresh M. Giga**

Completed By:	/S/ Paresh M. Giga	23-Mar-2024 09:00	**Reviewed by:**	/S/ Tyler Monroe	25-Mar-2024 16:13
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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 ☐	COC IDs:none
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):	1.5C/1.4C U/C	IR31	
Cooler(s)/Kit(s):	Blue		
Date/Time sample(s) sent to storage:	3/23/24 09:30		
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:

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

Chain-of-Custody

WORKORDER #: HS24031318

PAGE: 1 of 1

DISPOSAL: By Lab or Return to Client

SAMPLER	Jeff Braden	DATE	
PROJECT NAME	Bernhardt 31-1	FACILITY ID	~~05~~ 123-31267
PROJECT No.	09F2073022	EDD FORMAT	COGCC EDD, LTE
	PDCE Bradenhead Sampling	PURCHASE ORDER	N/A
COMPANY NAME	PDC Energy	BILL TO COMPANY	PDC Energy
SEND REPORT TO	Jenifer Hakkarinen	INVOICE ATTN TO	Christopher Schelich
ADDRESS	1775 Sherman ST, Suite 3000	ADDRESS	1775 Sherman Street, Suite 3000
CITY / STATE / ZIP	Denver, CO 80203	CITY / STATE / ZIP	Denver, Colorado
PHONE	303-860-5815	PHONE	970-415-1881
FAX		FAX	
E-MAIL	jenifer.hakkarinen@pdce.com jessica.johannsen@pdce.com jbraden@ensolum.com	E-MAIL	Christopher.Schelich@pdce.com

TURNAROUND: Standard

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	Dissolved Methane, Ethane, Propane RSK 175	BTEX & TPH GRO SW8260_25	TPH DRO SW8015M	Alkalinity, Carbonate, Bicarbonate, Total SM2320B	Total Cations - see comments EPA200.7/208	Total Anions - see comments EPA 300.0	Total Dissolved Solids SM2540C
	Bernhardt 31-1	W	3/20/24	1400	11	1,2	II	X	X	X	X	X	X	X

HS24031318
PDC Energy
Bernhardt 31-1

*Time Zone: MST

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

For metals or anions, please detail analytes below.

Comments: Calcium, Chloride, Magnesium, Potassium, Sodium, Sulfate*
Samples analyzed per
COGCC Bradenhead Sampling Program
If bubbles are present in voas, please proceed with analysis

Blue VOC. 1.50 #31 Cl- 0.10

Cations/Anions:

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Jeff Braden	3/21/24	1255
RECEIVED BY	KarenCraven	KarenCraven	3-21-24	1255
RELINQUISHED BY	KarenCraven	KarenCraven	3.21.24	1255
RECEIVED BY		P. Gund.	3/22/24	0930
RELINQUISHED BY				
RECEIVED BY				

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

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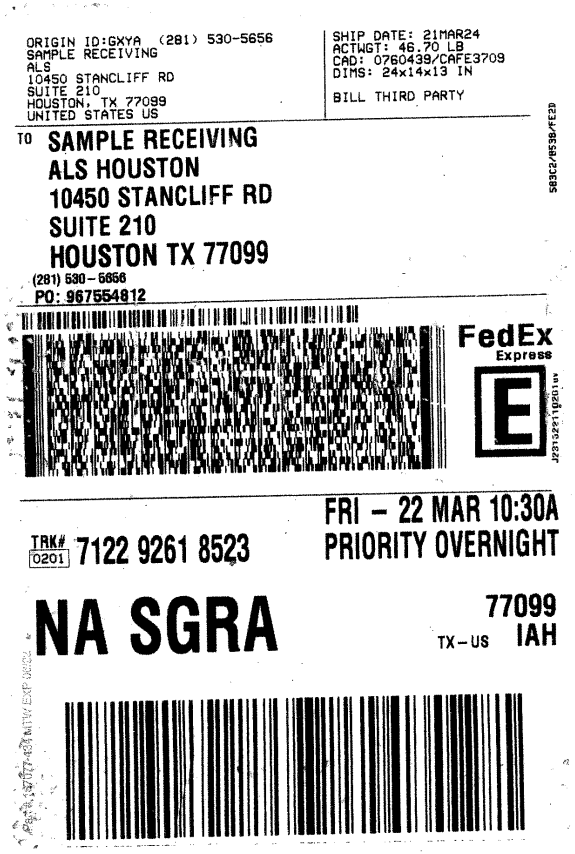

ORIGIN ID:GXYA (281) 530-5656
SAMPLE RECEIVING
ALS
10450 STANCLIFF RD
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 21MAR24
ACTWGT: 46.70 LB
CAD: 0760439/CAFE3709
DIMS: 24x14x13 IN

BILL THIRD PARTY

TO SAMPLE RECEIVING
ALS HOUSTON
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
PO: 967554812

FedEx Express

TRK# 0201 7122 9261 8523

FRI - 22 MAR 10:30A
PRIORITY OVERNIGHT

NA SGRA

77099
TX-US IAH

Received 3/22/24 09:30.
Blue ice: 1.5°
+31 corr 0.1°

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