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December 22, 2022

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

Work Order: **HS22120519**

Laboratory Results for: **Bost 38N-8C-L**

Dear Max Trehus ,

ALS Environmental received 2 sample(s) on Dec 08, 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: Bost 38N-8C-L
Work Order: HS22120519

SAMPLE SUMMARY

| Lab Samp ID | Client Sample ID | Matrix | TagNo | Collection Date | Date Received | Hold |
|---------------|------------------|--------|-------|-------------------|-------------------|--------------------------|
| HS22120519-01 | 38N-8C-LA | Water | | 06-Dec-2022 14:47 | 08-Dec-2022 09:10 | <input type="checkbox"/> |
| HS22120519-02 | 38N-8C-LB | Water | | 06-Dec-2022 14:47 | 08-Dec-2022 09:10 | <input type="checkbox"/> |

Client: PDC Energy
Project: Bost 38N-8C-L
Work Order: HS22120519

CASE NARRATIVE

GC Semivolatiles by Method SW8015M

Batch ID: 187300

Sample ID: 38N-8C-LA (HS22120519-01)

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

GC Semivolatiles by Method RSK-175

Batch ID: R424044

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

GC Volatiles by Method SW8015

Batch ID: R423904

Sample ID: 38N-8C-LA (HS22120519-01)

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

GCMS Volatiles by Method SW8260

Batch ID: R423876

Sample ID: 38N-8C-LA (HS22120519-01)

- Lowest possible dilution due to matrix interference and high concentrations of non target analytes.

Metals by Method E200.8

Batch ID: 187498

Sample ID: HS22120313-01MS

- MS and MSD are for an unrelated sample

Sample ID: HS22120366-01MS

- MS and MSD are for an unrelated sample

Sample ID: 38N-8C-LB (HS22120519-02)

- Sample ran at 5x due to sample matrix.

Batch ID: 187544

Sample ID: HS22120721-01MS

- MS and MSD are for an unrelated sample

Sample ID: HS22120837-02MS

- MS and MSD are for an unrelated sample

WetChemistry by Method SM2320B

Batch ID: R424474

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

Client: PDC Energy
Project: Bost 38N-8C-L
Work Order: HS22120519

CASE NARRATIVE

WetChemistry by Method SM2320B

WetChemistry by Method E300

Batch ID: R424435

Sample ID: HS22120617-15MSD

- MS and MSD are for an unrelated sample

WetChemistry by Method M2540C

Batch ID: R424028

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

Client: PDC Energy
 Project: Bost 38N-8C-L
 Sample ID: 38N-8C-LA
 Collection Date: 06-Dec-2022 14:47

ANALYTICAL REPORT
 WorkOrder:HS22120519
 Lab ID:HS22120519-01
 Matrix:Water

| ANALYSES | RESULT | QUAL | MDL | REPORT LIMIT | UNITS | DILUTION FACTOR | DATE ANALYZED |
|---|--------|-----------------------|---------|---------------------------|-------|-----------------|-------------------|
| LOW LEVEL VOLATILES BY SW8260C | | Method:SW8260 | | Analyst: FT | | | |
| Benzene | | U | 200 | 1000 | ug/L | 1000 | 14-Dec-2022 05:40 |
| Ethylbenzene | | U | 300 | 1000 | ug/L | 1000 | 14-Dec-2022 05:40 |
| m,p-Xylene | | U | 500 | 2000 | ug/L | 1000 | 14-Dec-2022 05:40 |
| o-Xylene | | U | 300 | 1000 | ug/L | 1000 | 14-Dec-2022 05:40 |
| Toluene | | U | 200 | 1000 | ug/L | 1000 | 14-Dec-2022 05:40 |
| Xylenes, Total | | U | 300 | 1000 | ug/L | 1000 | 14-Dec-2022 05:40 |
| Surr: 1,2-Dichloroethane-d4 | 114 | | | 70-126 | %REC | 1000 | 14-Dec-2022 05:40 |
| Surr: 4-Bromofluorobenzene | 108 | | | 77-113 | %REC | 1000 | 14-Dec-2022 05:40 |
| Surr: Dibromofluoromethane | 108 | | | 77-123 | %REC | 1000 | 14-Dec-2022 05:40 |
| Surr: Toluene-d8 | 101 | | | 82-127 | %REC | 1000 | 14-Dec-2022 05:40 |
| GASOLINE RANGE ORGANICS BY SW8015C | | Method:SW8015 | | Analyst: FT | | | |
| Gasoline Range Organics | 139 | | 5.00 | 25.0 | mg/L | 500 | 13-Dec-2022 15:51 |
| Surr: 4-Bromofluorobenzene | 822 | S | | 70-123 | %REC | 500 | 13-Dec-2022 15:51 |
| DISSOLVED GASES BY RSK-175 | | Method:RSK-175 | | Analyst: SAM | | | |
| Ethane | 91.7 | | 2.88 | 20.0 | ug/L | 20 | 14-Dec-2022 15:46 |
| Methane | 358 | | 2.14 | 10.0 | ug/L | 20 | 14-Dec-2022 15:46 |
| Propane | 44.0 | | 1.00 | 1.00 | ug/L | 1 | 14-Dec-2022 15:01 |
| TPH DRO/ORO BY SW8015C | | Method:SW8015M | | Prep:SW3511 / 13-Dec-2022 | | Analyst: PPM | |
| DRO (>C10 - C28) | 2,300 | | 20 | 49 | mg/L | 1000 | 16-Dec-2022 05:46 |
| Surr: 2-Fluorobiphenyl | 0 | JS | | 60-135 | %REC | 1000 | 16-Dec-2022 05:46 |
| TOTAL METALS BY E200.8, REV 5.4, 1994 | | Method:E200.8 | | Prep:E200.8 / 19-Dec-2022 | | Analyst: JC | |
| Calcium | 571 | | 0.0900 | 2.50 | mg/L | 5 | 19-Dec-2022 20:36 |
| Magnesium | 0.0801 | J | 0.00780 | 0.500 | mg/L | 1 | 20-Dec-2022 12:33 |
| Potassium | 352 | | 0.165 | 2.50 | mg/L | 5 | 19-Dec-2022 20:36 |
| Sodium | 389 | | 0.105 | 1.00 | mg/L | 5 | 19-Dec-2022 20:36 |
| ANIONS BY E300.0, REV 2.1, 1993 | | Method:E300 | | Analyst: TH | | | |
| Chloride | 973 | | 4.00 | 10.0 | mg/L | 20 | 20-Dec-2022 11:25 |
| Sulfate | 390 | | 4.00 | 10.0 | mg/L | 20 | 20-Dec-2022 11:25 |
| TOTAL DISSOLVED SOLIDS BY SM2540C-2011 | | Method:M2540C | | Analyst: CWG | | | |
| Total Dissolved Solids (Residue, Filterable) | 18,600 | | 5.00 | 10.0 | mg/L | 1 | 13-Dec-2022 17:00 |
| ALKALINITY BY SM 2320B-2011 | | Method:SM2320B | | Analyst: JAC | | | |
| Alkalinity, Bicarbonate (As CaCO3) | 262 | | 50.0 | 50.0 | mg/L | 10 | 20-Dec-2022 23:22 |
| Alkalinity, Carbonate (As CaCO3) | 240 | | 50.0 | 50.0 | mg/L | 10 | 20-Dec-2022 23:22 |
| Alkalinity, Total (As CaCO3) | 502 | | 50.0 | 50.0 | mg/L | 10 | 20-Dec-2022 23:22 |

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

Client: PDC Energy
 Project: Bost 38N-8C-L
 Sample ID: 38N-8C-LB
 Collection Date: 06-Dec-2022 14:47

ANALYTICAL REPORT

WorkOrder:HS22120519
 Lab ID:HS22120519-02
 Matrix:Water

| ANALYSES | RESULT | QUAL | MDL | REPORT LIMIT | UNITS | DILUTION FACTOR | DATE ANALYZED |
|--|--------|------|--------|--------------|---------------------------|-----------------|-------------------|
| DISSOLVED METALS BY E200.8, REV 5.4, 1994 | | | | | Prep:E200.8 / 16-Dec-2022 | | Analyst: JHD |
| Method:E200.8 (dissolved) | | | | | | | |
| Calcium | 510 | | 0.180 | 5.00 | mg/L | 10 | 16-Dec-2022 22:37 |
| Magnesium | 0.0863 | J | 0.0390 | 2.50 | mg/L | 5 | 19-Dec-2022 13:29 |
| Potassium | 306 | | 0.330 | 5.00 | mg/L | 10 | 16-Dec-2022 22:37 |
| Sodium | 350 | | 0.210 | 2.00 | mg/L | 10 | 16-Dec-2022 22:37 |

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

Weight / Prep Log

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

Batch ID: 187248 **Start Date:** 12 Dec 2022 09:00 **End Date:** 12 Dec 2022 18:00
Method: SAMPLE FILTRATION - 0.45 MICRON FILTER **Prep Code:** FILTRATION

| Sample ID | Container | Sample Wt/Vol | Final Volume | Prep Factor | |
|---------------|-----------|---------------|--------------|-------------|----------------------|
| HS22120519-02 | | 100 (mL) | 100 (mL) | 1 | 120 ml Plastic, Neat |

Batch ID: 187300 **Start Date:** 13 Dec 2022 08:09 **End Date:** 13 Dec 2022 13:00
Method: SW3511 **Prep Code:** 3511_DRO

| Sample ID | Container | Sample Wt/Vol | Final Volume | Prep Factor | |
|---------------|-----------|---------------|--------------|-------------|-------------|
| HS22120519-01 | | 33.68 (mL) | 2 (mL) | 0.05938 | 40 mL Amber |

Batch ID: 187498 **Start Date:** 16 Dec 2022 10:00 **End Date:** 16 Dec 2022 14:00
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 | |
|---------------|-----------|---------------|--------------|-------------|----------------------|
| HS22120519-02 | | 10 (mL) | 10 (mL) | 1 | 120 ml Plastic, Neat |

Batch ID: 187544 **Start Date:** 19 Dec 2022 13:00 **End Date:** 19 Dec 2022 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 | |
|---------------|-----------|---------------|--------------|-------------|-------------------------------|
| HS22120519-01 | | 10 (mL) | 10 (mL) | 1 | 250 mL plastic, HNO3 to pH <2 |

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

DATES REPORT

| Sample ID | Client Samp ID | Collection Date | Leachate Date | Prep Date | Analysis Date | DF |
|--------------------------------|----------------|--|---------------|-------------------|----------------------|------|
| Batch ID: 187300 (0) | | Test Name : TPH DRO/ORO BY SW8015C | | | Matrix: Water | |
| HS22120519-01 | 38N-8C-LA | 06 Dec 2022 14:47 | | 13 Dec 2022 08:09 | 16 Dec 2022 05:46 | 1000 |
| Batch ID: 187498 (0) | | Test Name : DISSOLVED METALS BY E200.8, REV 5.4, 1994 | | | Matrix: Water | |
| HS22120519-02 | 38N-8C-LB | 06 Dec 2022 14:47 | | 16 Dec 2022 10:00 | 19 Dec 2022 13:29 | 5 |
| HS22120519-02 | 38N-8C-LB | 06 Dec 2022 14:47 | | 16 Dec 2022 10:00 | 16 Dec 2022 22:37 | 10 |
| Batch ID: 187544 (0) | | Test Name : TOTAL METALS BY E200.8, REV 5.4, 1994 | | | Matrix: Water | |
| HS22120519-01 | 38N-8C-LA | 06 Dec 2022 14:47 | | 19 Dec 2022 13:00 | 20 Dec 2022 12:33 | 1 |
| HS22120519-01 | 38N-8C-LA | 06 Dec 2022 14:47 | | 19 Dec 2022 13:00 | 19 Dec 2022 20:36 | 5 |
| Batch ID: R423876 (0) | | Test Name : LOW LEVEL VOLATILES BY SW8260C | | | Matrix: Water | |
| HS22120519-01 | 38N-8C-LA | 06 Dec 2022 14:47 | | | 14 Dec 2022 05:40 | 1000 |
| Batch ID: R423904 (0) | | Test Name : GASOLINE RANGE ORGANICS BY SW8015C | | | Matrix: Water | |
| HS22120519-01 | 38N-8C-LA | 06 Dec 2022 14:47 | | | 13 Dec 2022 15:51 | 500 |
| Batch ID: R424028 (0) | | Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C-2011 | | | Matrix: Water | |
| HS22120519-01 | 38N-8C-LA | 06 Dec 2022 14:47 | | | 13 Dec 2022 17:00 | 1 |
| Batch ID: R424044 (0) | | Test Name : DISSOLVED GASES BY RSK-175 | | | Matrix: Water | |
| HS22120519-01 | 38N-8C-LA | 06 Dec 2022 14:47 | | | 14 Dec 2022 15:46 | 20 |
| HS22120519-01 | 38N-8C-LA | 06 Dec 2022 14:47 | | | 14 Dec 2022 15:01 | 1 |
| Batch ID: R424435 (0) | | Test Name : ANIONS BY E300.0, REV 2.1, 1993 | | | Matrix: Water | |
| HS22120519-01 | 38N-8C-LA | 06 Dec 2022 14:47 | | | 20 Dec 2022 11:25 | 20 |
| Batch ID: R424474 (0) | | Test Name : ALKALINITY BY SM 2320B-2011 | | | Matrix: Water | |
| HS22120519-01 | 38N-8C-LA | 06 Dec 2022 14:47 | | | 20 Dec 2022 23:22 | 10 |

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

Batch ID: 187300 (0) **Instrument:** FID-16 **Method:** TPH DRO/ORO BY SW8015C

| MBLK | | Sample ID: MBLK-187300 | | | Units: mg/L | | Analysis Date: 16-Dec-2022 08:13 | | | |
|-------------------------------|---------|------------------------|---------|---------------|----------------|---------------|----------------------------------|------|-----------|------|
| Client ID: | | Run ID: FID-16_424411 | | | SeqNo: 7042068 | | PrepDate: 13-Dec-2022 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| DRO (>C10 - C28) | U | 0.050 | | | | | | | | |
| <i>Surr: 2-Fluorobiphenyl</i> | 0.03914 | 0.0050 | 0.06 | 0 | 65.2 | 60 - 135 | | | | |

| LCS | | Sample ID: LCS-187300 | | | Units: mg/L | | Analysis Date: 16-Dec-2022 08:42 | | | |
|-------------------------------|---------|-----------------------|---------|---------------|----------------|---------------|----------------------------------|------|-----------|------|
| Client ID: | | Run ID: FID-16_424411 | | | SeqNo: 7042069 | | PrepDate: 13-Dec-2022 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| DRO (>C10 - C28) | 0.5465 | 0.050 | 0.6 | 0 | 91.1 | 70 - 130 | | | | |
| <i>Surr: 2-Fluorobiphenyl</i> | 0.06162 | 0.0050 | 0.06 | 0 | 103 | 60 - 135 | | | | |

| LCSD | | Sample ID: LCSD-187300 | | | Units: mg/L | | Analysis Date: 16-Dec-2022 09:11 | | | |
|-------------------------------|---------|------------------------|---------|---------------|----------------|---------------|----------------------------------|-------|-----------|------|
| Client ID: | | Run ID: FID-16_424411 | | | SeqNo: 7042070 | | PrepDate: 13-Dec-2022 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| DRO (>C10 - C28) | 0.5636 | 0.050 | 0.6 | 0 | 93.9 | 70 - 130 | 0.5465 | 3.08 | 20 | |
| <i>Surr: 2-Fluorobiphenyl</i> | 0.06202 | 0.0050 | 0.06 | 0 | 103 | 60 - 135 | 0.06162 | 0.647 | 20 | |

The following samples were analyzed in this batch: HS22120519-01

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

Batch ID: R424044 (0) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

| MBLK | | Sample ID: MBLK-221214 | | Units: ug/L | | Analysis Date: 14-Dec-2022 10:19 | | | | |
|-------------|--------|-------------------------------|---------|-----------------------|------|---|---------------|--------------|-----------|------|
| Client ID: | | Run ID: FID-4_424044 | | SeqNo: 7033239 | | PrepDate: | | DF: 1 | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Ethane | U | 1.00 | | | | | | | | |
| Methane | U | 0.500 | | | | | | | | |
| Propane | U | 1.00 | | | | | | | | |

| LCS | | Sample ID: LCS-221214 | | Units: ug/L | | Analysis Date: 14-Dec-2022 10:35 | | | | |
|------------|--------|------------------------------|---------|-----------------------|------|---|---------------|--------------|-----------|------|
| Client ID: | | Run ID: FID-4_424044 | | SeqNo: 7033240 | | PrepDate: | | DF: 1 | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Ethane | 17.39 | 1.00 | 18.04 | 0 | 96.4 | 75 - 125 | | | | |
| Methane | 8.472 | 0.500 | 9.647 | 0 | 87.8 | 75 - 125 | | | | |
| Propane | 27.69 | 1.00 | 26.46 | 0 | 105 | 75 - 125 | | | | |

| LCSD | | Sample ID: LCSD-221214 | | Units: ug/L | | Analysis Date: 14-Dec-2022 10:53 | | | | |
|-------------|--------|-------------------------------|---------|-----------------------|------|---|---------------|--------------|-----------|------|
| Client ID: | | Run ID: FID-4_424044 | | SeqNo: 7033241 | | PrepDate: | | DF: 1 | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Ethane | 18.33 | 1.00 | 18.04 | 0 | 102 | 75 - 125 | 17.39 | 5.25 | 30 | |
| Methane | 8.823 | 0.500 | 9.647 | 0 | 91.5 | 75 - 125 | 8.472 | 4.06 | 30 | |
| Propane | 27.35 | 1.00 | 26.46 | 0 | 103 | 75 - 125 | 27.69 | 1.24 | 30 | |

The following samples were analyzed in this batch: HS22120519-01

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

| | | | | | | | | | |
|--------------------------------|-------------------------------|---------------------------|---------|---|---|---------------|---------------|------|----------------|
| Batch ID: R423904 (0) | | Instrument: FID-20 | | Method: GASOLINE RANGE ORGANICS BY SW8015C | | | | | |
| MBLK | Sample ID: MBLK-221213 | Units: mg/L | | | Analysis Date: 13-Dec-2022 11:47 | | | | |
| Client ID: | Run ID: FID-20_423904 | SeqNo: 7030500 | | 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>0.09405</i> | <i>0.00500</i> | <i>0.1</i> | <i>0</i> | <i>94.0</i> | <i>70 - 121</i> | | | |

| | | | | | | | | | |
|------------|------------------------------|-----------------------|---------|---------------|---|---------------|---------------|------|----------------|
| LCS | Sample ID: LCS-221213 | Units: mg/L | | | Analysis Date: 13-Dec-2022 11:19 | | | | |
| Client ID: | Run ID: FID-20_423904 | SeqNo: 7030498 | | PrepDate: | | | DF: 1 | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |

| | | | | | | | | | |
|-----------------------------------|---------------|----------------|------------|----------|------------|-----------------|--|--|--|
| Gasoline Range Organics | 0.8341 | 0.0500 | 1 | 0 | 83.4 | 76 - 124 | | | |
| <i>Surr: 4-Bromofluorobenzene</i> | <i>0.1033</i> | <i>0.00500</i> | <i>0.1</i> | <i>0</i> | <i>103</i> | <i>52 - 138</i> | | | |

| | | | | | | | | | |
|-------------|-------------------------------|-----------------------|---------|---------------|---|---------------|---------------|------|----------------|
| LCSD | Sample ID: LCSD-221213 | Units: mg/L | | | Analysis Date: 13-Dec-2022 11:33 | | | | |
| Client ID: | Run ID: FID-20_423904 | SeqNo: 7030499 | | PrepDate: | | | DF: 1 | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |

| | | | | | | | | | |
|-----------------------------------|---------------|----------------|------------|----------|------------|-----------------|---------------|------------|-----------|
| Gasoline Range Organics | 0.8629 | 0.0500 | 1 | 0 | 86.3 | 76 - 124 | 0.8341 | 3.39 | 20 |
| <i>Surr: 4-Bromofluorobenzene</i> | <i>0.1058</i> | <i>0.00500</i> | <i>0.1</i> | <i>0</i> | <i>106</i> | <i>52 - 138</i> | <i>0.1033</i> | <i>2.4</i> | <i>20</i> |

The following samples were analyzed in this batch: HS22120519-01

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

| | | | | | | | | | | |
|-------------------------------|---------------------------------|--|---|---------------|------|---------------|---------------|------|-----------|------|
| Batch ID: 187498 (0) | Instrument: ICPMS07 | Method: DISSOLVED METALS BY E200.8, REV 5.4, 1994 (DISSOLVED) | | | | | | | | |
| MBLK | Sample ID: MBLKF2-187498 | Units: ug/L | Analysis Date: 16-Dec-2022 21:48 | | | | | | | |
| Client ID: | Run ID: ICPMS07_424168 | SeqNo: 7037410 | PrepDate: 16-Dec-2022 DF: 1 | | | | | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |

| | | | | | | | | | | |
|-----------|-------|-----|--|--|--|--|--|--|--|---|
| Calcium | U | 500 | | | | | | | | |
| Magnesium | 10.81 | 500 | | | | | | | | J |
| Potassium | U | 500 | | | | | | | | |
| Sodium | U | 200 | | | | | | | | |

| | | | | | | | | | | |
|-------------|---------------------------------|-----------------------|---|---------------|------|---------------|---------------|------|-----------|------|
| MBLK | Sample ID: MBLKF3-187498 | Units: ug/L | Analysis Date: 16-Dec-2022 21:49 | | | | | | | |
| Client ID: | Run ID: ICPMS07_424168 | SeqNo: 7037411 | PrepDate: 16-Dec-2022 DF: 1 | | | | | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |

| | | | | | | | | | | |
|-----------|-------|-----|--|--|--|--|--|--|--|---|
| Calcium | 36.83 | 500 | | | | | | | | J |
| Magnesium | 18.42 | 500 | | | | | | | | J |
| Potassium | U | 500 | | | | | | | | |
| Sodium | U | 200 | | | | | | | | |

| | | | | | | | | | | |
|-------------|---------------------------------|-----------------------|---|---------------|------|---------------|---------------|------|-----------|------|
| MBLK | Sample ID: MBLKF1-187498 | Units: ug/L | Analysis Date: 16-Dec-2022 21:46 | | | | | | | |
| Client ID: | Run ID: ICPMS07_424168 | SeqNo: 7037409 | PrepDate: 16-Dec-2022 DF: 1 | | | | | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |

| | | | | | | | | | | |
|-----------|------|-----|--|--|--|--|--|--|--|---|
| Calcium | U | 500 | | | | | | | | |
| Magnesium | 12.8 | 500 | | | | | | | | J |
| Potassium | U | 500 | | | | | | | | |
| Sodium | U | 200 | | | | | | | | |

| | | | | | | | | | | |
|-------------|-------------------------------|-----------------------|---|---------------|------|---------------|---------------|------|-----------|------|
| MBLK | Sample ID: MBLK-187498 | Units: ug/L | Analysis Date: 16-Dec-2022 21:44 | | | | | | | |
| Client ID: | Run ID: ICPMS07_424168 | SeqNo: 7037408 | PrepDate: 16-Dec-2022 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 | | | | | | | | |

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

| Batch ID: 187498 (0) | | Instrument: ICPMS07 | | Method: DISSOLVED METALS BY E200.8, REV 5.4, 1994 (DISSOLVED) | | | | | | |
|------------------------|--------|-----------------------------|---------|---|------|----------------------------------|---------------|-------|----------------|--|
| LCS | | Sample ID: LCS-187498 | | Units: ug/L | | Analysis Date: 16-Dec-2022 21:51 | | | | |
| Client ID: | | Run ID: ICPMS07_424168 | | SeqNo: 7037412 | | PrepDate: 16-Dec-2022 | | DF: 1 | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual | |
| Calcium | 4840 | 500 | 5000 | 0 | 96.8 | 85 - 115 | | | | |
| Magnesium | 4960 | 500 | 5000 | 0 | 99.2 | 85 - 115 | | | | |
| Potassium | 4902 | 500 | 5000 | 0 | 98.0 | 85 - 115 | | | | |
| Sodium | 4774 | 200 | 5000 | 0 | 95.5 | 85 - 115 | | | | |
| MS | | Sample ID: HS22120366-01MS | | Units: ug/L | | Analysis Date: 16-Dec-2022 22:04 | | | | |
| Client ID: | | Run ID: ICPMS07_424168 | | SeqNo: 7037416 | | PrepDate: 16-Dec-2022 | | DF: 1 | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual | |
| Calcium | 88260 | 500 | 5000 | 76730 | 231 | 85 - 115 | | | SO | |
| Magnesium | 38390 | 500 | 5000 | 31130 | 145 | 85 - 115 | | | SO | |
| Potassium | 7559 | 500 | 5000 | 2434 | 102 | 85 - 115 | | | | |
| Sodium | 408000 | 200 | 5000 | 373300 | 693 | 85 - 115 | | | SEO | |
| MS | | Sample ID: HS22120313-01MS | | Units: ug/L | | Analysis Date: 16-Dec-2022 21:59 | | | | |
| Client ID: | | Run ID: ICPMS07_424168 | | SeqNo: 7037438 | | PrepDate: 16-Dec-2022 | | DF: 1 | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual | |
| Calcium | 72440 | 500 | 5000 | 68660 | 75.6 | 85 - 115 | | | SO | |
| Magnesium | 13950 | 500 | 5000 | 9225 | 94.4 | 85 - 115 | | | | |
| Potassium | 9549 | 500 | 5000 | 4816 | 94.7 | 85 - 115 | | | | |
| Sodium | 85600 | 200 | 5000 | 80870 | 94.7 | 85 - 115 | | | O | |
| MSD | | Sample ID: HS22120366-01MSD | | Units: ug/L | | Analysis Date: 16-Dec-2022 22:06 | | | | |
| Client ID: | | Run ID: ICPMS07_424168 | | SeqNo: 7037417 | | PrepDate: 16-Dec-2022 | | DF: 1 | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual | |
| Calcium | 83870 | 500 | 5000 | 76730 | 143 | 85 - 115 | 88260 | 5.1 | 20 SO | |
| Magnesium | 36450 | 500 | 5000 | 31130 | 106 | 85 - 115 | 38390 | 5.2 | 20 O | |
| Potassium | 7245 | 500 | 5000 | 2434 | 96.2 | 85 - 115 | 7559 | 4.24 | 20 | |
| Sodium | 391700 | 200 | 5000 | 373300 | 366 | 85 - 115 | 408000 | 4.09 | 20 SEO | |

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

| | | | | | | | | | | |
|-------------------------------|------------------------------------|----------------------------|-----------------------|--|---|----------------------|----------------------|-------------|------------------|-------------|
| Batch ID: 187498 (0) | | Instrument: ICPMS07 | | Method: DISSOLVED METALS BY E200.8, REV 5.4, 1994 (DISSOLVED) | | | | | | |
| MSD | Sample ID: HS22120313-01MSD | | Units: ug/L | | Analysis Date: 16-Dec-2022 22:01 | | | | | |
| Client ID: | Run ID: ICPMS07_424168 | | SeqNo: 7037439 | | PrepDate: 16-Dec-2022 | | DF: 1 | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Calcium | 70870 | 500 | 5000 | 68660 | 44.1 | 85 - 115 | 72440 | 2.2 | 20 | SO |
| Magnesium | 13620 | 500 | 5000 | 9225 | 87.9 | 85 - 115 | 13950 | 2.37 | 20 | |
| Potassium | 9349 | 500 | 5000 | 4816 | 90.6 | 85 - 115 | 9549 | 2.12 | 20 | |
| Sodium | 82120 | 200 | 5000 | 80870 | 25.0 | 85 - 115 | 85600 | 4.16 | 20 | SO |

The following samples were analyzed in this batch: HS22120519-02

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

| Batch ID: 187544 (0) | | Instrument: ICPMS06 | | Method: TOTAL METALS BY E200.8, REV 5.4, 1994 | | | | | | |
|------------------------|-----------------------------------|-----------------------|---------|---|------|---------------|---------------|------|-----------|------|
| MBLK | Sample ID: MBLK-187544 | Units: ug/L | | Analysis Date: 19-Dec-2022 20:06 | | | | | | |
| Client ID: | Run ID: ICPMS06_424292 | SeqNo: 7040505 | | PrepDate: 19-Dec-2022 | | DF: 1 | | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Calcium | 58.7 | 500 | | | | | | | | J |
| Magnesium | 11.45 | 500 | | | | | | | | J |
| Potassium | U | 500 | | | | | | | | |
| Sodium | 63.84 | 200 | | | | | | | | J |
| LCS | Sample ID: LCS-187544 | Units: ug/L | | Analysis Date: 19-Dec-2022 20:08 | | | | | | |
| Client ID: | Run ID: ICPMS06_424292 | SeqNo: 7040506 | | PrepDate: 19-Dec-2022 | | DF: 1 | | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Calcium | 5466 | 500 | 5000 | 0 | 109 | 85 - 115 | | | | |
| Magnesium | 5646 | 500 | 5000 | 0 | 113 | 85 - 115 | | | | |
| Potassium | 5403 | 500 | 5000 | 0 | 108 | 85 - 115 | | | | |
| Sodium | 5526 | 200 | 5000 | 0 | 111 | 85 - 115 | | | | |
| MS | Sample ID: HS22120837-02MS | Units: ug/L | | Analysis Date: 19-Dec-2022 20:18 | | | | | | |
| Client ID: | Run ID: ICPMS06_424292 | SeqNo: 7040511 | | PrepDate: 19-Dec-2022 | | DF: 1 | | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Calcium | 130800 | 500 | 5000 | 127100 | 73.9 | 70 - 130 | | | | O |
| Magnesium | 34110 | 500 | 5000 | 29370 | 94.8 | 70 - 130 | | | | O |
| Potassium | 10280 | 500 | 5000 | 5020 | 105 | 70 - 130 | | | | |
| Sodium | 44010 | 200 | 5000 | 39730 | 85.5 | 70 - 130 | | | | O |
| MS | Sample ID: HS22120721-01MS | Units: ug/L | | Analysis Date: 19-Dec-2022 20:12 | | | | | | |
| Client ID: | Run ID: ICPMS06_424292 | SeqNo: 7040508 | | PrepDate: 19-Dec-2022 | | DF: 1 | | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Calcium | 62120 | 500 | 5000 | 57180 | 98.9 | 70 - 130 | | | | O |
| Magnesium | 10880 | 500 | 5000 | 5589 | 106 | 70 - 130 | | | | |
| Potassium | 34200 | 500 | 5000 | 29650 | 91.1 | 70 - 130 | | | | O |
| Sodium | 130900 | 200 | 5000 | 128300 | 52.0 | 70 - 130 | | | | SO |

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

Batch ID: 187544 (0) **Instrument:** ICPMS06 **Method:** TOTAL METALS BY E200.8, REV 5.4, 1994

| MSD | | Sample ID: HS22120837-02MSD | | | Units: ug/L | | Analysis Date: 19-Dec-2022 20:20 | | | | |
|------------|--------|-----------------------------|---------|---------------|----------------|---------------|----------------------------------|------|-----------|------|--|
| Client ID: | | Run ID: ICPMS06_424292 | | | SeqNo: 7040512 | | PrepDate: 19-Dec-2022 | | DF: 1 | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Calcium | 141400 | 500 | 5000 | 127100 | 287 | 70 - 130 | 130800 | 7.81 | 20 | SO | |
| Magnesium | 36290 | 500 | 5000 | 29370 | 138 | 70 - 130 | 34110 | 6.19 | 20 | SO | |
| Potassium | 10780 | 500 | 5000 | 5020 | 115 | 70 - 130 | 10280 | 4.73 | 20 | | |
| Sodium | 47310 | 200 | 5000 | 39730 | 152 | 70 - 130 | 44010 | 7.23 | 20 | SO | |

| MSD | | Sample ID: HS22120721-01MSD | | | Units: ug/L | | Analysis Date: 19-Dec-2022 20:14 | | | | |
|------------|--------|-----------------------------|---------|---------------|----------------|---------------|----------------------------------|------|-----------|------|--|
| Client ID: | | Run ID: ICPMS06_424292 | | | SeqNo: 7040509 | | PrepDate: 19-Dec-2022 | | DF: 1 | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual | |
| Calcium | 63390 | 500 | 5000 | 57180 | 124 | 70 - 130 | 62120 | 2.02 | 20 | O | |
| Magnesium | 11250 | 500 | 5000 | 5589 | 113 | 70 - 130 | 10880 | 3.29 | 20 | | |
| Potassium | 35260 | 500 | 5000 | 29650 | 112 | 70 - 130 | 34200 | 3.04 | 20 | O | |
| Sodium | 134500 | 200 | 5000 | 128300 | 125 | 70 - 130 | 130900 | 2.74 | 20 | O | |

The following samples were analyzed in this batch: HS22120519-01

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

Batch ID: R423876 (0) **Instrument:** VOA11 **Method:** LOW LEVEL VOLATILES BY SW8260C

| MBLK | | Sample ID: VBLKW-221213 | | Units: ug/L | | Analysis Date: 13-Dec-2022 21:25 | | | |
|------------------------------------|--------------|--------------------------------|-----------|-----------------------|------------|---|---------------|--------------|----------------|
| Client ID: | | Run ID: VOA11_423876 | | SeqNo: 7030931 | | 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>57.89</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>116</i> | <i>70 - 123</i> | | | |
| <i>Surr: 4-Bromofluorobenzene</i> | <i>50.63</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>101</i> | <i>77 - 113</i> | | | |
| <i>Surr: Dibromofluoromethane</i> | <i>54.56</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>109</i> | <i>73 - 126</i> | | | |
| <i>Surr: Toluene-d8</i> | <i>51.27</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>103</i> | <i>81 - 120</i> | | | |

| LCS | | Sample ID: VLCSW-221213 | | Units: ug/L | | Analysis Date: 13-Dec-2022 20:40 | | | |
|------------------------------------|--------------|--------------------------------|-----------|-----------------------|-------------|---|---------------|--------------|----------------|
| Client ID: | | Run ID: VOA11_423876 | | SeqNo: 7030930 | | PrepDate: | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Benzene | 22.89 | 1.0 | 20 | 0 | 114 | 74 - 120 | | | |
| Ethylbenzene | 21.43 | 1.0 | 20 | 0 | 107 | 77 - 117 | | | |
| m,p-Xylene | 43.64 | 2.0 | 40 | 0 | 109 | 77 - 122 | | | |
| o-Xylene | 22.15 | 1.0 | 20 | 0 | 111 | 75 - 119 | | | |
| Toluene | 21.84 | 1.0 | 20 | 0 | 109 | 77 - 118 | | | |
| Xylenes, Total | 65.79 | 1.0 | 60 | 0 | 110 | 75 - 122 | | | |
| <i>Surr: 1,2-Dichloroethane-d4</i> | <i>51.89</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>104</i> | <i>70 - 123</i> | | | |
| <i>Surr: 4-Bromofluorobenzene</i> | <i>50.35</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>101</i> | <i>77 - 113</i> | | | |
| <i>Surr: Dibromofluoromethane</i> | <i>49.19</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>98.4</i> | <i>73 - 126</i> | | | |
| <i>Surr: Toluene-d8</i> | <i>50.63</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>101</i> | <i>81 - 120</i> | | | |

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

Batch ID: R423876 (0) **Instrument:** VOA11 **Method:** LOW LEVEL VOLATILES BY SW8260C

| MS | | Sample ID: HS22120619-05MS | | Units: ug/L | | Analysis Date: 13-Dec-2022 22:10 | | | |
|------------------------------------|--------------|-----------------------------------|-----------|-----------------------|------------|---|---------------|--------------|----------------|
| Client ID: | | Run ID: VOA11_423876 | | SeqNo: 7030933 | | PrepDate: | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Benzene | 23.34 | 1.0 | 20 | 0 | 117 | 70 - 127 | | | |
| Ethylbenzene | 23.6 | 1.0 | 20 | 0 | 118 | 70 - 124 | | | |
| m,p-Xylene | 47.15 | 2.0 | 40 | 0 | 118 | 70 - 130 | | | |
| o-Xylene | 23.66 | 1.0 | 20 | 0 | 118 | 70 - 124 | | | |
| Toluene | 24.48 | 1.0 | 20 | 0 | 122 | 70 - 123 | | | |
| Xylenes, Total | 70.82 | 1.0 | 60 | 0 | 118 | 70 - 130 | | | |
| <i>Surr: 1,2-Dichloroethane-d4</i> | <i>54.18</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>108</i> | <i>70 - 126</i> | | | |
| <i>Surr: 4-Bromofluorobenzene</i> | <i>50.91</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>102</i> | <i>77 - 113</i> | | | |
| <i>Surr: Dibromofluoromethane</i> | <i>50.94</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>102</i> | <i>77 - 123</i> | | | |
| <i>Surr: Toluene-d8</i> | <i>52.07</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>104</i> | <i>82 - 127</i> | | | |

| MSD | | Sample ID: HS22120619-05MSD | | Units: ug/L | | Analysis Date: 13-Dec-2022 22:33 | | | |
|------------------------------------|--------------|------------------------------------|-----------|-----------------------|------------|---|---------------|--------------|----------------|
| Client ID: | | Run ID: VOA11_423876 | | SeqNo: 7030934 | | PrepDate: | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Benzene | 22.97 | 1.0 | 20 | 0 | 115 | 70 - 127 | 23.34 | 1.6 | 20 |
| Ethylbenzene | 22.1 | 1.0 | 20 | 0 | 111 | 70 - 124 | 23.6 | 6.54 | 20 |
| m,p-Xylene | 45.73 | 2.0 | 40 | 0 | 114 | 70 - 130 | 47.15 | 3.07 | 20 |
| o-Xylene | 22.92 | 1.0 | 20 | 0 | 115 | 70 - 124 | 23.66 | 3.16 | 20 |
| Toluene | 22.99 | 1.0 | 20 | 0 | 115 | 70 - 123 | 24.48 | 6.29 | 20 |
| Xylenes, Total | 68.65 | 1.0 | 60 | 0 | 114 | 70 - 130 | 70.82 | 3.1 | 20 |
| <i>Surr: 1,2-Dichloroethane-d4</i> | <i>54.29</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>109</i> | <i>70 - 126</i> | <i>54.18</i> | <i>0.203</i> | <i>20</i> |
| <i>Surr: 4-Bromofluorobenzene</i> | <i>51.24</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>102</i> | <i>77 - 113</i> | <i>50.91</i> | <i>0.636</i> | <i>20</i> |
| <i>Surr: Dibromofluoromethane</i> | <i>50.71</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>101</i> | <i>77 - 123</i> | <i>50.94</i> | <i>0.462</i> | <i>20</i> |
| <i>Surr: Toluene-d8</i> | <i>51.42</i> | <i>1.0</i> | <i>50</i> | <i>0</i> | <i>103</i> | <i>82 - 127</i> | <i>52.07</i> | <i>1.26</i> | <i>20</i> |

The following samples were analyzed in this batch: HS22120519-01

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

Batch ID: R424028 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

| | | | | | | | | | |
|-------------|--------------------------------|-----------------------|---------|---------------|---|---------------|---------------|------|----------------|
| MBLK | Sample ID: WBLK-121322 | Units: mg/L | | | Analysis Date: 13-Dec-2022 17:00 | | | | |
| Client ID: | Run ID: Balance1_424028 | SeqNo: 7032891 | | 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: WLCS-121322 | Units: mg/L | | | Analysis Date: 13-Dec-2022 17:00 | | | | |
| Client ID: | Run ID: Balance1_424028 | SeqNo: 7032892 | | 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) 1066 10.0 1000 0 107 85 - 115

| | | | | | | | | | |
|------------|------------------------------------|-----------------------|---------|---------------|---|---------------|---------------|------|----------------|
| DUP | Sample ID: HS22120648-06DUP | Units: mg/L | | | Analysis Date: 13-Dec-2022 17:00 | | | | |
| Client ID: | Run ID: Balance1_424028 | SeqNo: 7032890 | | 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) 2150 10.0 2140 0.466 5

| | | | | | | | | | |
|------------|------------------------------------|-----------------------|---------|---------------|---|---------------|---------------|------|----------------|
| DUP | Sample ID: HS22120421-01DUP | Units: mg/L | | | Analysis Date: 13-Dec-2022 17:00 | | | | |
| Client ID: | Run ID: Balance1_424028 | SeqNo: 7032877 | | 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) 2180 10.0 2160 0.922 5

The following samples were analyzed in this batch: HS22120519-01

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

| Batch ID: R424435 (0) | | Instrument: ICS-Integrion | | Method: ANIONS BY E300.0, REV 2.1, 1993 | | | | | | |
|-------------------------|------------------------------------|-------------------------------------|-----------------------|---|---|---------------|---------------|-------|----------------|--|
| MBLK | Sample ID: MBLK | Units: mg/L | | | Analysis Date: 20-Dec-2022 08:23 | | | | | |
| Client ID: | | Run ID: ICS-Integrion_424435 | SeqNo: 7042625 | 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: 20-Dec-2022 08:29 | | | | | |
| Client ID: | | Run ID: ICS-Integrion_424435 | SeqNo: 7042626 | PrepDate: | DF: 1 | | | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual | |
| Chloride | 19.54 | 0.500 | 20 | 0 | 97.7 | 90 - 110 | | | | |
| Sulfate | 20.08 | 0.500 | 20 | 0 | 100 | 90 - 110 | | | | |
| MS | Sample ID: HS22121099-01MS | Units: mg/L | | | Analysis Date: 20-Dec-2022 08:39 | | | | | |
| Client ID: | | Run ID: ICS-Integrion_424435 | SeqNo: 7042628 | PrepDate: | DF: 1 | | | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual | |
| Chloride | 11.11 | 0.500 | 10 | 1.599 | 95.2 | 80 - 120 | | | | |
| Sulfate | 17.3 | 0.500 | 10 | 7.561 | 97.4 | 80 - 120 | | | | |
| MS | Sample ID: HS22120617-15MS | Units: mg/L | | | Analysis Date: 20-Dec-2022 09:54 | | | | | |
| Client ID: | | Run ID: ICS-Integrion_424435 | SeqNo: 7042640 | PrepDate: | DF: 10 | | | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual | |
| Chloride | 551.7 | 5.00 | 100 | 470.7 | 81.0 | 80 - 120 | | | O | |
| Sulfate | 108.9 | 5.00 | 100 | 7.498 | 101 | 80 - 120 | | | | |
| MSD | Sample ID: HS22121099-01MSD | Units: mg/L | | | Analysis Date: 20-Dec-2022 08:45 | | | | | |
| Client ID: | | Run ID: ICS-Integrion_424435 | SeqNo: 7042629 | PrepDate: | DF: 1 | | | | | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual | |
| Chloride | 11.2 | 0.500 | 10 | 1.599 | 96.0 | 80 - 120 | 11.11 | 0.771 | 20 | |
| Sulfate | 17.46 | 0.500 | 10 | 7.561 | 98.9 | 80 - 120 | 17.3 | 0.912 | 20 | |

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

Batch ID: R424435 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MSD Sample ID: **HS22120617-15MSD** Units: **mg/L** Analysis Date: **20-Dec-2022 09:59**
 Client ID: Run ID: **ICS-Integrion_424435** SeqNo: **7042641** PrepDate: DF: **10**
 Analyte Result PQL SPK Val SPK Ref Value %REC Control Limit RPD Ref Value %RPD RPD Limit Qual

| | | | | | | | | | | |
|----------|-------|------|-----|-------|------|----------|-------|------|----|----|
| Chloride | 541.5 | 5.00 | 100 | 470.7 | 70.8 | 80 - 120 | 551.7 | 1.87 | 20 | SO |
| Sulfate | 107 | 5.00 | 100 | 7.498 | 99.5 | 80 - 120 | 108.9 | 1.72 | 20 | |

The following samples were analyzed in this batch: HS22120519-01

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

QC BATCH REPORT

| | | |
|--------------------------------|------------------------------|--|
| Batch ID: R424474 (0) | Instrument: ManTech01 | Method: ALKALINITY BY SM 2320B-2011 |
|--------------------------------|------------------------------|--|

| | | | | | | | | | | |
|------------------------------------|---------------------------------|-----------------------|---|---------------|------|---------------|---------------|------|-----------|------|
| MBLK | Sample ID: WBLKW1-122022 | Units: mg/L | Analysis Date: 20-Dec-2022 21:18 | | | | | | | |
| Client ID: | Run ID: ManTech01_424474 | SeqNo: 7043741 | 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) | U | 5.00 | | | | | | | | |
| Alkalinity, Carbonate (As CaCO3) | U | 5.00 | | | | | | | | |
| Alkalinity, Hydroxide (As CaCO3) | U | 5.00 | | | | | | | | |
| Alkalinity, Total (As CaCO3) | U | 5.00 | | | | | | | | |

| | | | | | | | | | | |
|----------------------------------|---------------------------------|-----------------------|---|---------------|------|---------------|---------------|------|-----------|------|
| LCS | Sample ID: LCS1-122022 | Units: mg/L | Analysis Date: 20-Dec-2022 21:26 | | | | | | | |
| Client ID: | Run ID: ManTech01_424474 | SeqNo: 7043742 | 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) | 1001 | 5.00 | 1000 | 0 | 100 | 85 - 115 | | | | |
| Alkalinity, Total (As CaCO3) | 1029 | 5.00 | 1000 | 0 | 103 | 85 - 115 | | | | |

| | | | | | | | | | | |
|----------------------------------|---------------------------------|-----------------------|---|---------------|------|---------------|---------------|------|-----------|------|
| LCSD | Sample ID: LCSD1-122022 | Units: mg/L | Analysis Date: 20-Dec-2022 21:35 | | | | | | | |
| Client ID: | Run ID: ManTech01_424474 | SeqNo: 7043743 | 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) | 1024 | 5.00 | 1000 | 0 | 102 | 85 - 115 | 1001 | 2.22 | 20 | |
| Alkalinity, Total (As CaCO3) | 1048 | 5.00 | 1000 | 0 | 105 | 85 - 115 | 1029 | 1.83 | 20 | |

| | | | | | | | | | | |
|------------------------------------|------------------------------------|-----------------------|---|---------------|------|---------------|---------------|------|-----------|------|
| DUP | Sample ID: HS22120648-06DUP | Units: mg/L | Analysis Date: 20-Dec-2022 21:52 | | | | | | | |
| Client ID: | Run ID: ManTech01_424474 | SeqNo: 7043745 | 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) | 748.8 | 5.00 | | | | | 777.6 | 3.78 | 20 | |
| Alkalinity, Carbonate (As CaCO3) | U | 5.00 | | | | | 0 | 0 | 20 | |
| Alkalinity, Hydroxide (As CaCO3) | U | 5.00 | | | | | 0 | 0 | 20 | |
| Alkalinity, Total (As CaCO3) | 748.8 | 5.00 | | | | | 777.6 | 3.78 | 20 | |

The following samples were analyzed in this batch: HS22120519-01

Client: PDC Energy
Project: Bost 38N-8C-L
WorkOrder: HS22120519

**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 | 624-2022 | 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: HS22120519

Date/Time Received: **08-Dec-2022 09:10**

Client Name: PDC Energy 80620

Received by: **Malcolm Burleson**

| | | | |
|--|-------------------|---|-------------------|
| Completed By: <u>/S/ Niles D. Ranchod</u> | 08-Dec-2022 17:31 | Reviewed by: <u>/S/ Tyler Monroe</u> | 09-Dec-2022 13:42 |
| 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 checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input 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 type="checkbox"/> | No <input checked="" 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): | 4.3uc/3.8c | IR31 |
| Cooler(s)/Kit(s): | 49540 | |
| Date/Time sample(s) sent to storage: | 12/08/2022 20:00 | |
| 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: | <input style="width: 100%;" type="text"/> | |

Login Notes:

Client Contacted: _____ Date Contacted: _____ Person Contacted: _____

Contacted By: _____ Regarding: _____

Comments:

Corrective Action:



Chain of Custody Form

Page _____ of _____

ALS Environmental
 North America Corporate Office
 10450 Stancliff Road, Suite 210
 Houston, TX 77099
 +1 800 695 7222

| Customer Information | | Project Information | | | | | Parameter/Method Request for Analysis | | | | | | | | | |
|---|--|---------------------------|---|---|-------------------------------|-----------|--|------------------------------|---|---|----------------|---|---|---|--|--|
| Purchase Order | | Project Name | Bost 38N-8C-L | | | 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 | | | | | | | | | |
| City/State/Zip | Evans, CO 80620 | City/State/Zip | Denver, CO 80203 | | | F | Dissolved Ca, Mg, K, Na - need to lab filter | | | | | | | | | |
| Phone | 720-762-3569 | Phone | 303-860-5800 | | | G | Total Ca, Mg, K, Na | | | | | | | | | |
| Fax | | Fax | | | | H | | | | | | | | | | |
| e-Mail Address | max.trehus@pdce.com jenifer.hakkarinen@pdce.com jessica.johannsen@pdce.com | e-Mail Address | | | | I | | | | | | | | | | |
| J | | | | | | | | | | | | | | | | |
| No. | Sample Description | Date | Time | Matrix | Pres. | # Bottles | A | B | C | D | E | F | G | H | | |
| 1 | 38N-8C-L A | 12/6/22 | 14:47 | W | 8 | 3 | X | | | | | | | | | |
| 2 | 38N-8C-L A | ↓ | ↓ | W | 1 | 3 | | X | | | | | | | | |
| 3 | 38N-8C-L A | ↓ | ↓ | W | 1 | 3 | | | X | | | | | | | |
| 4 | 38N-8C-L A | ↓ | ↓ | W | 1 | 3 | | | | X | | | | | | |
| 5 | 38N-8C-L A | ↓ | ↓ | W | 8 | 1 | | | | | X | | | | | |
| 6 | 38N-8C-L B | ↓ | ↓ | W | 8 | 1 | | | | | | X | | | | |
| 7 | 38N-8C-L A | ↓ | ↓ | W | 2 | 1 | | | | | | | X | | | |
| 8 | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |
| Sampler(s): Please Print & Sign Max Trehus <i>[Signature]</i> | | Shipment Method: FedEx | | 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 <input type="checkbox"/> Other _____ | | | | Results Due Date: | | | | | | | | |
| Relinquished by: <i>[Signature]</i> | Date: 12/7/22 | Time: 14:47 | Received by: <i>[Signature]</i> | | Notes: Facility ID: 47898A | | | | | | | | | | | |
| Relinquished by: <i>[Signature]</i> | Date: 12/7/22 | Time: 1630 | Received by (Laboratory): <i>[Signature]</i> | | Cooler Temp. 4.3 | | QC Package: (Check Box Below) | | | | | | | | | |
| Logged by (Laboratory): | | Date: | Time: | Checked by (Laboratory): | | X | | Level II: Standard QC | | | TRRP-Checklist | | | | | |
| | | | | | | | | Level III: Std QC + Raw Data | | | TRRP Level IV | | | | | |
| | | | | | | | | Level IV: SW846 CLP-Like | | | | | | | | |
| | | | | | | | | Other: _____ | | | | | | | | |
| Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035 | | | | | | | | | | | | | | | | |



HS22120519
 PDC Energy
 Bost 38N-8C-L

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

49504 DEC 08 2022

ORIGIN ID:GKYA (870) 305-1648
AMY KEPHART
ALS
965 E 11TH ST
LOVELAND, CO 80537
UNITED STATES US

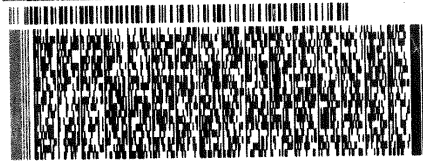
SHIP DATE: 07DEC22
ACTWT: 49.00 LB
CAD: 0487862/CAFE3G18
DIMS: 23x14x13 IN
BILL SENDER

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

49504

REC379674336

INU: PDI: REF: DEPT:



FedEx
Express



#2210221010001111

TRK# 6182 5243 3920
0201

THU - 08 DEC 10:30A
PRIORITY OVERNIGHT

XA SGRA

77099
TX-US IAH

