



Monday, November 23, 2020

Jeff Braden
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003

Re: ALS Workorder: 2010601
Project Name: PDC Bradenhead Sampling
Project Number: 018820075

Dear Mr. Braden:

One water sample was received from LT Environmental, Inc., on 10/27/2020. The sample was scheduled for the following analyses:

Dissolved Gasses

GC/MS Volatiles

Inorganics

Metals

Total Extractable Petroleum Hydrocarbons (Diesel)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Katie M. O'Brien
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

| ALS Environmental – Fort Collins | |
|----------------------------------|---------------------------------|
| Accreditation Body | License or Certification Number |
| AIHA | 214884 |
| Alaska (AK) | UST-086 |
| Alaska (AK) | CO01099 |
| Arizona (AZ) | AZ0742 |
| California (CA) | 06251CA |
| Colorado (CO) | CO01099 |
| Florida (FL) | E87914 |
| Idaho (ID) | CO01099 |
| Kansas (KS) | E-10381 |
| Kentucky (KY) | 90137 |
| PJ-LA (DoD ELAP/ISO 170250) | 95377 |
| Louisiana (LA) | 05057 |
| Maryland (MD) | 285 |
| Missouri (MO) | 175 |
| Nebraska(NE) | NE-OS-24-13 |
| Nevada (NV) | CO000782008A |
| New York (NY) | 12036 |
| North Dakota (ND) | R-057 |
| Oklahoma (OK) | 1301 |
| Pennsylvania (PA) | 68-03116 |
| Tennessee (TN) | 2976 |
| Texas (TX) | T104704241 |
| Utah (UT) | CO01099 |
| Washington (WA) | C1280 |



2010601

GC/MS Volatiles:

The sample was analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The sample was also analyzed for Gasoline Range Organics (GRO).

All surrogate recoveries were within acceptance criteria with the following exception:

| Surrogate | Sample | Direction |
|----------------------|--------|-----------|
| Dibromofluoromethane | -1 | Low |

The low surrogate is likely due to the low pH of the sample. No further action was taken.

All remaining acceptance criteria were met.

Dissolved Gasses:

The sample was prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met.

DRO:

The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

Metals:

The sample was analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by ICPMS followed method 200.8 and the current revision of SOP 827.

All acceptance criteria were met.

Inorganics:

The sample was analyzed following EMSL and Standard Method procedures for the current revisions of the following SOPs and methods:



| <u>Analyte</u> | <u>Method</u> | <u>SOP #</u> |
|----------------|--------------------|--------------|
| Alkalinity | SM2320B | 1106 |
| Bicarbonate | SM2320B | 1106 |
| Carbonate | SM2320B | 1106 |
| TDS | SM2540C | 1101 |
| Chloride | 300.0 Revision 2.1 | 1113 |
| Sulfate | 300.0 Revision 2.1 | 1113 |

A matrix spike (MS) was prepared and analyzed with the anion batch. All guidance criteria for precision and accuracy were met with the following exception:

| <u>Analyte</u> | <u>Sample ID</u> |
|----------------|------------------|
| Chloride | 2010601-1MS |

The native sample result is flagged for chloride. The laboratory control samples indicate that the procedure was in control.

All remaining acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2010601

Client Name: LT Environmental, Inc.

Client Project Name: PDC Bradenhead Sampling

Client Project Number: 018820075

Client PO Number:

| Client Sample Number | Lab Sample Number | COC Number | Matrix | Date Collected | Time Collected |
|----------------------|-------------------|------------|--------|----------------|----------------|
| Ward W-20-19HC bh | 2010601-1 | | WATER | 27-Oct-20 | 14:10 |



2225 Commerce Drive, Fort Collins, Colorado 80524
 TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

[illegible]



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client Name/ID:

LTE

Workorder No:

2010601

Project Manager:

KMO

Initials:

TM

Date:

10/28/20

| | | | |
|--|---|---|---|
| 1. Are airbills / shipping documents present and/or removable? | <input checked="" type="checkbox"/> Drop Off | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| 2. Are custody seals on shipping containers intact? | <input checked="" type="checkbox"/> NONE | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| 3. Are custody seals on sample containers intact? | <input checked="" type="checkbox"/> NONE | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| 4. Is there a COC (chain-of-custody) present? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| 5. Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.) | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| 6. Are short-hold samples present? | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |
| 7. Are all samples within holding times for the requested analyses? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| 8. Were all sample containers received intact? (not broken or leaking) | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| 9. Is there sufficient sample for the requested analyses? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| 10. Are samples in proper containers for requested analyses? (form 250, Sample Handling Guidelines) | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| 11. Are all aqueous samples preserved correctly, if required? | <input type="checkbox"/> N/A | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO* |
| 12. Were unpreserved samples pH checked, if required? | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| 13. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm in diameter? | <input type="checkbox"/> N/A | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| 14. Were the samples shipped on ice? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| 15. Were cooler temperatures measured at 0.1 - 6.0°C? | IR gun used: <input type="checkbox"/> #3 <input checked="" type="checkbox"/> #5 <input type="checkbox"/> Rad Only | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |

Cooler #: 1

Temperature (°C): 3.8

of custody seals on cooler: 0

External mR/hr reading: -

Background mR/hr reading: 11

Were external mR/hr readings ≤ two times background and within DOT acceptance criteria? (If no, see Form 008)

☒ N/A ☐ YES ☐ NO

* Please provide details below for 'NO' responses in gray boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.

11.) 601-1-2 read initial pH of 11: added 0.5mL HNO3 (lot# 234822) for final pH of 11

13.) 601-1-6,7,8,9,10,11 have notable headspace

All client bottle ID's vs ALS lab ID's double-checked by: TM

If applicable, was the client contacted? ☐ YES ☐ N/A

Contact Name

Date:

Project Manager Signature / Date:

[Signature] 10/28/20

Client: LT Environmental, Inc.

Date: 23-Nov-20

Project: 018820075 PDC Bradenhead Sampling

Work Order: 2010601

Sample ID: Ward W-20-19HC bh

Lab ID: 2010601-1

Legal Location:

Matrix: WATER

Collection Date: 10/27/2020 14:10

Percent Moisture:

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--|--------|------|------------------|-------|-----------------------|------------------|
| Alkalinity as Calcium Carbonate | | | SM2320B | | Prep Date: 10/31/2020 | PrepBy: KJS |
| TOTAL ALKALINITY AS CaCO3 | 5000 | | 100 | MG/L | 1 | 10/31/2020 |
| BICARBONATE AS CaCO3 | ND | | 100 | MG/L | 1 | 10/31/2020 |
| CARBONATE AS CaCO3 | 720 | | 100 | MG/L | 1 | 10/31/2020 |
| Diesel Range Organics | | | SW8015M | | Prep Date: 11/5/2020 | PrepBy: ASZ |
| Diesel Range Organics | 6.9 | | 1 | MG/L | 1 | 11/18/2020 05:32 |
| Surr: O-TERPHENYL | 92 | | 69-120 | %REC | 1 | 11/18/2020 05:32 |
| Dissolved Gasses | | | RSK175 | | Prep Date: 11/5/2020 | PrepBy: ASZ |
| METHANE | 8400 | | 3 | UG/L | 3 | 11/5/2020 11:11 |
| ETHANE | 1700 | | 6 | UG/L | 3 | 11/5/2020 11:11 |
| PROPANE | 370 | | 3 | UG/L | 3 | 11/5/2020 11:11 |
| GC/MS Volatiles | | | SW8260_25 | | Prep Date: 11/6/2020 | PrepBy: TWK |
| BENZENE | 40 | | 1 | UG/L | 1 | 11/6/2020 23:00 |
| TOLUENE | 53 | | 1 | UG/L | 1 | 11/6/2020 23:00 |
| ETHYLBENZENE | 8.2 | | 1 | UG/L | 1 | 11/6/2020 23:00 |
| M+P-XYLENE | 35 | | 1 | UG/L | 1 | 11/6/2020 23:00 |
| O-XYLENE | 19 | | 1 | UG/L | 1 | 11/6/2020 23:00 |
| TOTAL XYLENES | 54 | | 1 | UG/L | 1 | 11/6/2020 23:00 |
| Surr: 4-BROMOFLUOROBENZENE | 109 | | 80-120 | %REC | 1 | 11/6/2020 23:00 |
| Surr: DIBROMOFLUOROMETHANE | 19 | * | 80-120 | %REC | 1 | 11/6/2020 23:00 |
| Surr: TOLUENE-D8 | 98 | | 80-120 | %REC | 1 | 11/6/2020 23:00 |
| GASOLINE RANGE ORGANICS | 3300 | | 100 | UG/L | 1 | 11/6/2020 23:00 |
| Ion Chromatography | | | EPA300.0 | | Prep Date: 10/31/2020 | PrepBy: KJS |
| CHLORIDE | 7700 | N | 100 | MG/L | 500 | 10/31/2020 17:08 |
| SULFATE | 210 | | 5 | MG/L | 5 | 11/3/2020 11:47 |
| Total Recoverable Metals by 200.8 | | | EPA200.8 | | Prep Date: 11/3/2020 | PrepBy: JML |
| CALCIUM | 630 | | 1 | MG/L | 10 | 11/5/2020 02:37 |
| MAGNESIUM | 8 | | 0.1 | MG/L | 10 | 11/5/2020 02:37 |
| POTASSIUM | 5200 | | 10 | MG/L | 100 | 11/5/2020 16:06 |
| SODIUM | 2600 | | 1 | MG/L | 10 | 11/5/2020 02:37 |
| Total Dissolved Solids | | | SM2540C | | Prep Date: 11/3/2020 | PrepBy: LMC |
| TOTAL DISSOLVED SOLIDS | 10000 | | 1000 | MG/L | 1 | 11/3/2020 |

Client: LT Environmental, Inc.
Project: 018820075 PDC Bradenhead Sampling
Sample ID: Ward W-20-19HC bh
Legal Location:
Collection Date: 10/27/2020 14:10

Date: 23-Nov-20
Work Order: 2010601
Lab ID: 2010601-1
Matrix: WATER
Percent Moisture:

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|----------|--------|------|--------------|-------|-----------------|---------------|
|----------|--------|------|--------------|-------|-----------------|---------------|

Explanation of Qualifiers

Radiochemistry:

- "Report Limit" is the MDC
 U or ND - Result is less than the sample specific MDC.
 Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
 Y2 - Chemical Yield outside default limits.
 W - DER is greater than Warning Limit of 1.42
 * - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
 # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
 G - Sample density differs by more than 15% of LCS density.
 D - DER is greater than Control Limit
 M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
 L - LCS Recovery below lower control limit.
 H - LCS Recovery above upper control limit.
 P - LCS, Matrix Spike Recovery within control limits.
 N - Matrix Spike Recovery outside control limits
 NC - Not Calculated for duplicate results less than 5 times MDC
 B - Analyte concentration greater than MDC.
 B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
 U or ND - Indicates that the compound was analyzed for but not detected.
 E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
 M - Duplicate injection precision was not met.
 N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
 Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
 * - Duplicate analysis (relative percent difference) not within control limits.
 S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.
 B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
 E - Analyte concentration exceeds the upper level of the calibration range.
 J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
 A - A tentatively identified compound is a suspected aldol-condensation product.
 X - The analyte was diluted below an accurate quantitation level.
 * - The spike recovery is equal to or outside the control criteria used.
 + - The relative percent difference (RPD) equals or exceeds the control criteria.
 G - A pattern resembling gasoline was detected in this sample.
 D - A pattern resembling diesel was detected in this sample.
 M - A pattern resembling motor oil was detected in this sample.
 C - A pattern resembling crude oil was detected in this sample.
 4 - A pattern resembling JP-4 was detected in this sample.
 5 - A pattern resembling JP-5 was detected in this sample.
 H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
 L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
 Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
 - gasoline
 - JP-8
 - diesel
 - mineral spirits
 - motor oil
 - Stoddard solvent
 - bunker C

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Date: 11/23/2020 8:52

Client: LT Environmental, Inc.

Work Order: 2010601

Project: 018820075 PDC Bradenhead Sampling

QC BATCH REPORT

Batch ID: HC201105-82-2 Instrument ID FUELS-1 Method: SW8015M

| | | | | | | | | | | | |
|-----------------------|------------------------|-------------|---------|---------------|----------------------|---------------------------------|----------------|---------|-------|-----------|------|
| LCS | Sample ID: HC201105-82 | Units: MG/L | | | | Analysis Date: 11/18/2020 03:46 | | | | | |
| Client ID: | Run ID: HC201116-81B | | | | Prep Date: 11/5/2020 | | | | DF: 1 | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| Diesel Range Organics | 6.98 | 1.07 | 8.33 | | 84 | 53-120 | | | | 20 | |
| Surr: O-TERPHENYL | 1.58 | | 1.67 | | 95 | 69-120 | | | | | |

| | | | | | | | | | | | |
|-----------------------|------------------------|-------------|---------|---------------|----------------------|---------------|---------------------------------|---------|-----|-----------|------|
| LCSD | Sample ID: HC201105-82 | | | | Units: MG/L | | Analysis Date: 11/18/2020 04:07 | | | | |
| Client ID: | Run ID: HC201116-81B | | | | Prep Date: 11/5/2020 | | | DF: 1 | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| Diesel Range Organics | 6.87 | 1.07 | 8.33 | | 82 | 53-120 | | 6.98 | 2 | 20 | |
| Surr: O-TERPHENYL | 1.56 | | 1.67 | | 94 | 69-120 | | | 1 | | |

| | | | | | |
|-----------------------|-------------------------------|-----------------------------|------|--|--|
| MB | Sample ID: HC201105-82 | Units: MG/L | | Analysis Date: 11/18/2020 03:25 | |
| Client ID: | Run ID: HC201116-81B | Prep Date: 11/5/2020 | | DF: 1 | |
| Analyte | Result | ReportLimit | Qual | | |
| Diesel Range Organics | ND | 1.1 | | | |
| Surr: O-TERPHENYL | 1.56 | | 93 | 69-120 | |

The following samples were analyzed in this batch:

2010601-1

Client: LT Environmental, Inc.
 Work Order: 2010601
 Project: 018820075 PDC Bradenhead Sampling

QC BATCH REPORT

Batch ID: **HC201105-91-2** Instrument ID **MEE-1** Method: **RSK175**

| | | | | | | | | | | | |
|------------|------------------------|-------------|---------|---------------|----------------------|---------------|--------------------------------|---------|-----|-----------|------|
| LCS | Sample ID: HC201105-91 | | | | Units: UG/L | | Analysis Date: 11/5/2020 10:30 | | | | |
| Client ID: | Run ID: HC201105-91A | | | | Prep Date: 11/5/2020 | | | DF: 1 | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| METHANE | 155 | 1 | 142 | | 109 | 76-125 | | | | 25 | |
| ETHANE | 288 | 2 | 267 | | 108 | 70-120 | | | | 25 | |
| PROPANE | 420 | 1 | 391 | | 107 | 72-120 | | | | 25 | |

| | | | | | | | | | | | |
|------------|------------------------|-------------|---------|---------------|----------------------|---------------|--------------------------------|---------|-----|-----------|------|
| LCSD | Sample ID: HC201105-91 | | | | Units: UG/L | | Analysis Date: 11/5/2020 11:30 | | | | |
| Client ID: | Run ID: HC201105-91A | | | | Prep Date: 11/5/2020 | | | DF: 1 | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| METHANE | 152 | 1 | 142 | | 107 | 76-125 | | 155 | 2 | 25 | |
| ETHANE | 282 | 2 | 267 | | 106 | 70-120 | | 288 | 2 | 25 | |
| PROPANE | 412 | 1 | 391 | | 105 | 72-120 | | 420 | 2 | 25 | |

| | | | | | | | |
|------------|------------------------|----------------------|-------------|-------------|----------------------|--------------------------------|-------|
| MB | Sample ID: HC201105-91 | | | Units: UG/L | | Analysis Date: 11/5/2020 10:33 | |
| Client ID: | | Run ID: HC201105-91A | | | Prep Date: 11/5/2020 | | DF: 1 |
| Analyte | | Result | ReportLimit | | Qual | | |
| METHANE | | ND | 1 | | | | |
| ETHANE | | ND | 2 | | | | |
| PROPANE | | ND | 1 | | | | |

The following samples were analyzed in this batch:

2010601-1

Client: LT Environmental, Inc.
 Work Order: 2010601
 Project: 018820075 PDC Bradenhead Sampling

QC BATCH REPORT

Batch ID: **IP201103-1-5** Instrument ID **ICPMS2** Method: **EPA200.8**

| | | | | | | | | | | | |
|------------|-----------------------|------------------------|---------|---------------|-------------|----------------------|--------------------------------|---------|--------|-----------|------|
| LCS | Sample ID: IM201103-1 | | | | Units: MG/L | | Analysis Date: 11/5/2020 02:11 | | | | |
| Client ID: | | Run ID: IM201104-10A19 | | | | Prep Date: 11/3/2020 | | | DF: 10 | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| CALCIUM | 11 | 1 | 10 | | 110 | 85-115 | | | | 20 | |
| MAGNESIUM | 10.4 | 0.1 | 10 | | 104 | 85-115 | | | | 20 | |
| POTASSIUM | 5.69 | 1 | 5 | | 114 | 85-115 | | | | 20 | |
| SODIUM | 10.8 | 1 | 10 | | 108 | 85-115 | | | | 20 | |

| | | | | | | | | | | | |
|------------|------------------------|-------------|---------|---------------|----------------------|---------------|--------------------------------|---------|-----|-----------|------|
| LCSD | Sample ID: IM201103-1 | | | | Units: MG/L | | Analysis Date: 11/5/2020 02:17 | | | | |
| Client ID: | Run ID: IM201104-10A19 | | | | Prep Date: 11/3/2020 | | | DF: 10 | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| CALCIUM | 10.9 | 1 | 10 | | 109 | 85-115 | | 11 | 1 | 20 | |
| MAGNESIUM | 9.99 | 0.1 | 10 | | 100 | 85-115 | | 10.4 | 4 | 20 | |
| POTASSIUM | 5.47 | 1 | 5 | | 109 | 85-115 | | 5.69 | 4 | 20 | |
| SODIUM | 10.6 | 1 | 10 | | 106 | 85-115 | | 10.8 | 2 | 20 | |

| MB | | Sample ID: IP201103-1 | | Units: MG/L | | Analysis Date: 11/5/2020 02:08 | |
|------------|--------|-------------------------------|--|-----------------------------|--|---------------------------------------|------|
| Client ID: | | Run ID: IM201104-10A19 | | Prep Date: 11/3/2020 | | DF: 10 | |
| Analyte | Result | ReportLimit | | | | | Qual |
| CALCIUM | ND | 1 | | | | | |
| MAGNESIUM | ND | 0.1 | | | | | |
| POTASSIUM | ND | 1 | | | | | |
| SODIUM | ND | 1 | | | | | |

The following samples were analyzed in this batch:

2010601-1

Client: LT Environmental, Inc.
 Work Order: 2010601
 Project: 018820075 PDC Bradenhead Sampling

QC BATCH REPORT

Batch ID: **VL201106-3-4** Instrument ID **HPV3** Method: **SW8260_25**

| | | | | | | | | | | | |
|----------------------------|-----------------------|-------------|---------|----------------------|------|---------------|--------------------------------|---------|-----|-----------|------|
| LCS | Sample ID: VL201106-3 | | | Units: %REC | | | Analysis Date: 11/6/2020 17:56 | | | | |
| Client ID: | Run ID: VL201106-3A | | | Prep Date: 11/6/2020 | | | DF: 1 | | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| Surr: 4-BROMOFLUOROBENZENE | 27.2 | | 25 | | 109 | 80-120 | | | | | |
| Surr: DIBROMOFLUOROMETHANE | 25.1 | | 25 | | 100 | 80-120 | | | | | |
| Surr: TOLUENE-D8 | 23.7 | | 25 | | 95 | 80-120 | | | | | |
| BENZENE | 41.3 | 1 | 40 | | 103 | 80-120 | | | | 20 | |
| TOLUENE | 38.3 | 1 | 40 | | 96 | 80-120 | | | | 20 | |
| ETHYLBENZENE | 40.1 | 1 | 40 | | 100 | 80-120 | | | | 20 | |
| M+P-XYLENE | 79.1 | 1 | 80 | | 99 | 80-120 | | | | 20 | |
| O-XYLENE | 38.9 | 1 | 40 | | 97 | 80-120 | | | | 20 | |

| | | | | | | | | | | | |
|----------------------------|-----------------------|-------------|---------|---------------|----------------------|---------------|--------------------------------|---------|-----|-----------|------|
| LCSD | Sample ID: VL201106-3 | | | | Units: %REC | | Analysis Date: 11/6/2020 18:37 | | | | |
| Client ID: | Run ID: VL201106-3A | | | | Prep Date: 11/6/2020 | | | DF: 1 | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| Surr: 4-BROMOFLUOROBENZENE | 26.7 | | 25 | | 107 | 80-120 | | | 2 | | |
| Surr: DIBROMOFLUOROMETHANE | 24.9 | | 25 | | 100 | 80-120 | | | 1 | | |
| Surr: TOLUENE-D8 | 24.1 | | 25 | | 96 | 80-120 | | | 2 | | |
| BENZENE | 42.4 | 1 | 40 | | 106 | 80-120 | | 41.3 | 3 | 20 | |
| TOLUENE | 40.1 | 1 | 40 | | 100 | 80-120 | | 38.3 | 5 | 20 | |
| ETHYLBENZENE | 41.6 | 1 | 40 | | 104 | 80-120 | | 40.1 | 4 | 20 | |
| M+P-XYLENE | 83.1 | 1 | 80 | | 104 | 80-120 | | 79.1 | 5 | 20 | |
| O-XYLENE | 41.9 | 1 | 40 | | 105 | 80-120 | | 38.9 | 7 | 20 | |

| MB | | Sample ID: VL201106-3 | | Units: %REC | | Analysis Date: 11/6/2020 19:58 | |
|----------------------------|--------|------------------------------|--|-----------------------------|-----|---------------------------------------|------|
| Client ID: | | Run ID: VL201106-3A | | Prep Date: 11/6/2020 | | DF: 1 | |
| Analyte | Result | ReportLimit | | | | | Qual |
| Surr: 4-BROMOFLUOROBENZENE | 26.1 | | | | 104 | 80-120 | |
| Surr: DIBROMOFLUOROMETHANE | 25 | | | | 100 | 80-120 | |
| Surr: TOLUENE-D8 | 24.6 | | | | 98 | 80-120 | |
| BENZENE | ND | 1 | | | | | |
| TOLUENE | ND | 1 | | | | | |
| ETHYLBENZENE | ND | 1 | | | | | |
| M+P-XYLENE | ND | 1 | | | | | |
| O-XYLENE | ND | 1 | | | | | |
| TOTAL XYLENES | ND | 1 | | | | | |

The following samples were analyzed in this batch:

2010601-1

Client: LT Environmental, Inc.
Work Order: 2010601
Project: 018820075 PDC Bradenhead Sampling

QC BATCH REPORT

Batch ID: **VL201106-3-5** Instrument ID **HPV3** Method: **SW8260_25**

| | | | | | | | | | | | |
|-------------------------|------------------------|---------------------|---------|---------------|----------------------|---------------|--------------------------------|---------|-----|-----------|------|
| LCS | Sample ID: VL201106-33 | | | Units: UG/L | | | Analysis Date: 11/6/2020 18:17 | | | | |
| Client ID: | | Run ID: VL201106-3A | | | Prep Date: 11/6/2020 | | | DF: 1 | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| GASOLINE RANGE ORGANICS | 1100 | 100 | 1000 | | 10 | 75-121 | | | | 20 | |

| | | | | | | | | | | | |
|-------------------------|------------------------|-------------|---------|---------------|------|---------------|--------------------------------|---------|-------|-----------|------|
| LCSD | Sample ID: VL201106-33 | | | Units: UG/L | | | Analysis Date: 11/6/2020 19:17 | | | | |
| Client ID: | Run ID: VL201106-3A | | | | | | Prep Date: 11/6/2020 | | DF: 1 | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| GASOLINE RANGE ORGANICS | 999 | 100 | 1000 | | 100 | 75-121 | | 1100 | 9 | 20 | |

| | | | | | | | | | |
|-------------------------|--|-----------------------|-------------|--|----------------------|--|--------------------------------|--|------|
| MB | | Sample ID: VL201106-3 | | | Units: UG/L | | Analysis Date: 11/6/2020 19:58 | | |
| Client ID: | | Run ID: VL201106-3A | | | Prep Date: 11/6/2020 | | DF: 1 | | |
| Analyte | | Result | ReportLimit | | | | | | Qual |
| GASOLINE RANGE ORGANICS | | ND | 100 | | | | | | |

The following samples were analyzed in this batch:

2010601-1

Client: LT Environmental, Inc.
Work Order: 2010601
Project: 018820075 PDC Bradenhead Sampling

QC BATCH REPORT

Batch ID: **AK201031-2-1** Instrument ID **NONE** Method: **SM2320B**

| | | | | | | | | | | | |
|---------------------------|--------|------------------------------|---------|---------------|--------------------|---------------|----------------------------------|---------|--------------|-----------|------|
| LCS | | Sample ID: AK201031-2 | | | Units: MG/L | | Analysis Date: 10/31/2020 | | | | |
| Client ID: | | Run ID: AK201031-1a1 | | | | | Prep Date: 10/31/2020 | | DF: 1 | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| TOTAL ALKALINITY AS CaCO3 | 99.3 | 5 | 100 | | 99 | 85-115 | | | | 15 | |

| | | | | | | | | | | | |
|---------------------------|------------------------------|-------------|---------|------------------------------|------|---------------|----------------------------------|---------|-----|-----------|------|
| LCSD | Sample ID: AK201031-2 | | | Units: MG/L | | | Analysis Date: 10/31/2020 | | | | |
| Client ID: | Run ID: AK201031-1a1 | | | Prep Date: 10/31/2020 | | | DF: 1 | | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| TOTAL ALKALINITY AS CaCO3 | 101 | 5 | 100 | | 101 | 85-115 | | 99.3 | 1 | 15 | |

| | | | | | | | |
|---------------------------|--|-----------------------|-------------|-----------------------|--|---------------------------|--|
| MB | | Sample ID: AK201031-2 | | Units: MG/L | | Analysis Date: 10/31/2020 | |
| Client ID: | | Run ID: AK201031-1a1 | | Prep Date: 10/31/2020 | | DF: 1 | |
| Analyte | | Result | ReportLimit | Qual | | | |
| TOTAL ALKALINITY AS CaCO3 | | ND | 5 | | | | |
| BICARBONATE AS CaCO3 | | ND | 5 | | | | |
| CARBONATE AS CaCO3 | | ND | 5 | | | | |

The following samples were analyzed in this batch:

2010601-1

Client: LT Environmental, Inc.
Work Order: 2010601
Project: 018820075 PDC Bradenhead Sampling

QC BATCH REPORT

Batch ID: **IC201031-2-1** Instrument ID: **IC3** Method: **EPA300.0**

| | | | | | | | | | | | |
|------------|-----------------------|-------------|---------|---------------|-----------------------|---------------|---------------------------------|---------|-----|-----------|------|
| LCS | Sample ID: IC201031-2 | | | | Units: MG/L | | Analysis Date: 10/31/2020 16:15 | | | | |
| Client ID: | Run ID: IC201031-2a1 | | | | Prep Date: 10/31/2020 | | | DF: 1 | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| CHLORIDE | 9.82 | 0.2 | 10 | | 98 | 90-110 | | | | 15 | |
| SULFATE | 49 | 1 | 50 | | 98 | 90-110 | | | | 15 | |

| | | | | | | | | | | | |
|------------|-----------------------|-------------|---------|---------------|-----------------------|---------------|---------------------------------|---------|-----|-----------|------|
| LCSD | Sample ID: IC201031-2 | | | | Units: MG/L | | Analysis Date: 10/31/2020 18:53 | | | | |
| Client ID: | Run ID: IC201031-2a1 | | | | Prep Date: 10/31/2020 | | | DF: 1 | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| CHLORIDE | 9.83 | 0.2 | 10 | | 98 | 90-110 | | 9.82 | 0 | 15 | |
| SULFATE | 49 | 1 | 50 | | 98 | 90-110 | | 49 | 0 | 15 | |

| | | | | | | | |
|------------|------------------------------|--------|-------------|------------------------------|--|--|--|
| MB | Sample ID: IC201031-2 | | | Units: MG/L | | Analysis Date: 10/31/2020 16:28 | |
| Client ID: | Run ID: IC201031-2a1 | | | Prep Date: 10/31/2020 | | DF: 1 | |
| | | | | | | | |
| Analyte | | Result | ReportLimit | Qual | | | |
| CHLORIDE | | ND | 0.2 | | | | |
| SULFATE | | ND | 1 | | | | |

| | | | | | | | | | | | |
|------------------------------|----------------------|-------------|----------------------|---------------|------|-----------------------|----------------|---------------------------------|---------|-----------|------|
| MS | Sample ID: 2010601-1 | | | | | Units: MG/L | | Analysis Date: 10/31/2020 17:21 | | | |
| Client ID: Ward W-20-19HC bh | | | Run ID: IC201031-2a1 | | | Prep Date: 10/31/2020 | | | DF: 500 | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| CHLORIDE | 10600 | 100 | 2500 | 7700 | 118 | 85-115 | | | | 15 | N |

The following samples were analyzed in this batch:

2010601-1

Client: LT Environmental, Inc.
Work Order: 2010601
Project: 018820075 PDC Bradenhead Sampling

QC BATCH REPORT

Batch ID: **IC201031-2-1** Instrument ID **IC3** Method: **EPA300.0**

MS Sample ID: **2010601-1** Units: **MG/L** Analysis Date: **11/3/2020 12:00**

Client ID: **Ward W-20-19HC bh** Run ID: **IC201103-1a1** Prep Date: **10/31/2020** DF: **5**

| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
|---------|--------|-------------|---------|---------------|------|---------------|----------------|---------|-----|-----------|------|
| SULFATE | 313 | 5 | 100 | 210 | 99 | 85-115 | | | | 15 | |

The following samples were analyzed in this batch:

2010601-1

Client: LT Environmental, Inc.
Work Order: 2010601
Project: 018820075 PDC Bradenhead Sampling

QC BATCH REPORT

Batch ID: **TD201103-1-2** Instrument ID **Balance** Method: **SM2540C**

| | | | | | | | | | | | |
|------------------------|-----------------------|----------------------|---------|---------------|----------------------|---------------|--------------------------|---------|-----|-----------|------|
| LCS | Sample ID: TD201103-1 | | | Units: MG/L | | | Analysis Date: 11/3/2020 | | | | |
| Client ID: | | Run ID: TD201103-1A1 | | | Prep Date: 11/3/2020 | | | DF: 1 | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| TOTAL DISSOLVED SOLIDS | 416 | 20 | 400 | | 104 | 85-115 | | | | 14 | |

| | | | | | | | | | | | |
|------------------------|--------|-----------------------|---------|---------------|----------------------|---------------|--------------------------|---------|-----|-----------|------|
| LCSD | | Sample ID: TD201103-1 | | | Units: MG/L | | Analysis Date: 11/3/2020 | | | | |
| Client ID: | | Run ID: TD201103-1A1 | | | Prep Date: 11/3/2020 | | DF: 1 | | | | |
| Analyte | Result | ReportLimit | SPK Val | SPK Ref Value | %REC | Control Limit | Decision Level | RPD Ref | RPD | RPD Limit | Qual |
| TOTAL DISSOLVED SOLIDS | 411 | 20 | 400 | | 103 | 85-115 | | 416 | 1 | 14 | |

| | | | | | | | | |
|------------------------|--|-----------------------|-------------|--|----------------------|--|--------------------------|--|
| MB | | Sample ID: TD201103-1 | | | Units: MG/L | | Analysis Date: 11/3/2020 | |
| Client ID: | | Run ID: TD201103-1A1 | | | Prep Date: 11/3/2020 | | DF: 1 | |
| Analyte | | Result | ReportLimit | | Qual | | | |
| TOTAL DISSOLVED SOLIDS | | ND | 20 | | | | | |

The following samples were analyzed in this batch:

2010601-1