

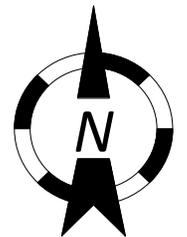
# YCF 35-12-1 Background Arsenic



Site Plan

Sample Number

Background Arsenic  
Sample Location





19-Dec-2018

Jessica Dooling  
XTO Energy  
21459 CR5  
Rifle, CO 81650

Re: **YCF 35-12**

Work Order: **18121006**

Dear Jessica,

ALS Environmental received 7 samples on 15-Dec-2018 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 14.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA  
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton", is written over a faint, illegible background.

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager

## Report of Laboratory Analysis

Certificate No: MN 998501

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** XTO Energy  
**Project:** YCF 35-12  
**Work Order:** 18121006

**Work Order Sample Summary**

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| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u>              |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 18121006-01        | Background As #1        | Soil          |                   | 12/14/2018 09:03       | 12/15/2018 09:00     | <input type="checkbox"/> |
| 18121006-02        | Background As #2        | Soil          |                   | 12/14/2018 09:07       | 12/15/2018 09:00     | <input type="checkbox"/> |
| 18121006-03        | Background As #3        | Soil          |                   | 12/14/2018 09:12       | 12/15/2018 09:00     | <input type="checkbox"/> |
| 18121006-04        | Background As #4        | Soil          |                   | 12/14/2018 09:17       | 12/15/2018 09:00     | <input type="checkbox"/> |
| 18121006-05        | Background As #5        | Soil          |                   | 12/14/2018 09:23       | 12/15/2018 09:00     | <input type="checkbox"/> |
| 18121006-06        | Background As #6        | Soil          |                   | 12/14/2018 09:31       | 12/15/2018 09:00     | <input type="checkbox"/> |
| 18121006-07        | Background As #7        | Soil          |                   | 12/14/2018 09:42       | 12/15/2018 09:00     | <input type="checkbox"/> |

**Client:** XTO Energy  
**Project:** YCF 35-12  
**WorkOrder:** 18121006

**QUALIFIERS,  
ACRONYMS, UNITS**

| <u>Qualifier</u> | <u>Description</u>  |
|------------------|---|
| *                | Value exceeds Regulatory Limit  |
| **               | Estimated Value   |
| a                | Analyte is non-accredited   |
| B                | Analyte detected in the associated Method Blank above the Reporting Limit   |
| E                | Value above quantitation range  |
| H                | Analyzed outside of Holding Time  |
| Hr               | BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.  |
| J                | Analyte is present at an estimated concentration between the MDL and Report Limit   |
| 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   |
| X                | Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level. |

| <u>Acronym</u> | <u>Description</u>                  |
|----------------|-------------------------------------|
| DUP            | Method Duplicate                    |
| LCS            | Laboratory Control Sample           |
| LCSD           | Laboratory Control Sample Duplicate |
| LOD            | Limit of Detection (see MDL)        |
| LOQ            | Limit of Quantitation (see PQL)     |
| MBLK           | Method Blank                        |
| MDL            | Method Detection Limit              |
| MS             | Matrix Spike                        |
| MSD            | Matrix Spike Duplicate              |
| PQL            | Practical Quantitation Limit        |
| RPD            | Relative Percent Difference         |
| TDL            | Target Detection Limit              |
| TNTC           | Too Numerous To Count               |
| A              | APHA Standard Methods               |
| D              | ASTM                                |
| E              | EPA                                 |
| SW             | SW-846 Update III                   |

| <u>Units Reported</u> | <u>Description</u>                 |
|-----------------------|------------------------------------|
| % of sample           | Percent of Sample                  |
| mg/Kg-dry             | Milligrams per Kilogram Dry Weight |

# ALS Group, USA

Date: 19-Dec-18

**Client:** XTO Energy  
**Project:** YCF 35-12  
**Sample ID:** Background As #1  
**Collection Date:** 12/14/2018 09:03 AM

**Work Order:** 18121006  
**Lab ID:** 18121006-01  
**Matrix:** SOIL

| Analyses                | Result | Qual | MDL             | Report Limit | Units                    | Dilution Factor | Date Analyzed    |
|-------------------------|--------|------|-----------------|--------------|--------------------------|-----------------|------------------|
| <b>METALS BY ICP-MS</b> |        |      | Method: SW6020A |              | Prep: SW3050B / 12/17/18 |                 | Analyst: STP     |
| Arsenic                 | 4.0    |      | 0.067           | 0.45         | mg/Kg-dry                | 1               | 12/17/2018 16:22 |
| <b>MOISTURE</b>         |        |      | Method: SW3550C |              |                          |                 | Analyst: KTP     |
| Moisture                | 26     |      | 0.10            | 0.10         | % of sample              | 1               | 12/17/2018 15:15 |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 19-Dec-18

**Client:** XTO Energy  
**Project:** YCF 35-12  
**Sample ID:** Background As #2  
**Collection Date:** 12/14/2018 09:07 AM

**Work Order:** 18121006  
**Lab ID:** 18121006-02  
**Matrix:** SOIL

| Analyses                | Result | Qual | MDL                    | Report Limit | Units                    | Dilution Factor | Date Analyzed       |
|-------------------------|--------|------|------------------------|--------------|--------------------------|-----------------|---------------------|
| <b>METALS BY ICP-MS</b> |        |      | Method: <b>SW6020A</b> |              | Prep: SW3050B / 12/17/18 |                 | Analyst: <b>STP</b> |
| Arsenic                 | 4.7    |      | 0.074                  | 0.50         | mg/Kg-dry                | 1               | 12/17/2018 16:24    |
| <b>MOISTURE</b>         |        |      | Method: <b>SW3550C</b> |              |                          |                 | Analyst: <b>KTP</b> |
| Moisture                | 19     |      | 0.10                   | 0.10         | % of sample              | 1               | 12/17/2018 15:15    |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 19-Dec-18

**Client:** XTO Energy  
**Project:** YCF 35-12  
**Sample ID:** Background As #3  
**Collection Date:** 12/14/2018 09:12 AM

**Work Order:** 18121006  
**Lab ID:** 18121006-03  
**Matrix:** SOIL

| Analyses                | Result | Qual | MDL                    | Report Limit | Units                    | Dilution Factor | Date Analyzed       |
|-------------------------|--------|------|------------------------|--------------|--------------------------|-----------------|---------------------|
| <b>METALS BY ICP-MS</b> |        |      | Method: <b>SW6020A</b> |              | Prep: SW3050B / 12/17/18 |                 | Analyst: <b>STP</b> |
| Arsenic                 | 7.0    |      | 0.070                  | 0.47         | mg/Kg-dry                | 1               | 12/17/2018 16:26    |
| <b>MOISTURE</b>         |        |      | Method: <b>SW3550C</b> |              |                          |                 | Analyst: <b>KTP</b> |
| Moisture                | 19     |      | 0.10                   | 0.10         | % of sample              | 1               | 12/17/2018 15:15    |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**ALS Group, USA**

Date: 19-Dec-18

**Client:** XTO Energy  
**Project:** YCF 35-12  
**Sample ID:** Background As #4  
**Collection Date:** 12/14/2018 09:17 AM

**Work Order:** 18121006  
**Lab ID:** 18121006-04  
**Matrix:** SOIL

| Analyses                | Result | Qual | MDL                    | Report Limit | Units                    | Dilution Factor | Date Analyzed       |
|-------------------------|--------|------|------------------------|--------------|--------------------------|-----------------|---------------------|
| <b>METALS BY ICP-MS</b> |        |      | Method: <b>SW6020A</b> |              | Prep: SW3050B / 12/17/18 |                 | Analyst: <b>STP</b> |
| Arsenic                 | 9.1    |      | 0.066                  | 0.45         | mg/Kg-dry                | 1               | 12/17/2018 16:28    |
| <b>MOISTURE</b>         |        |      | Method: <b>SW3550C</b> |              |                          |                 | Analyst: <b>KTP</b> |
| Moisture                | 22     |      | 0.10                   | 0.10         | % of sample              | 1               | 12/17/2018 15:15    |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 19-Dec-18

**Client:** XTO Energy  
**Project:** YCF 35-12  
**Sample ID:** Background As #5  
**Collection Date:** 12/14/2018 09:23 AM

**Work Order:** 18121006  
**Lab ID:** 18121006-05  
**Matrix:** SOIL

| Analyses                | Result | Qual | MDL                    | Report Limit | Units                    | Dilution Factor | Date Analyzed       |
|-------------------------|--------|------|------------------------|--------------|--------------------------|-----------------|---------------------|
| <b>METALS BY ICP-MS</b> |        |      | Method: <b>SW6020A</b> |              | Prep: SW3050B / 12/17/18 |                 | Analyst: <b>STP</b> |
| Arsenic                 | 5.6    |      | 0.062                  | 0.42         | mg/Kg-dry                | 1               | 12/17/2018 16:30    |
| <b>MOISTURE</b>         |        |      | Method: <b>SW3550C</b> |              |                          |                 | Analyst: <b>KTP</b> |
| Moisture                | 23     |      | 0.10                   | 0.10         | % of sample              | 1               | 12/17/2018 15:15    |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 19-Dec-18

**Client:** XTO Energy  
**Project:** YCF 35-12  
**Sample ID:** Background As #6  
**Collection Date:** 12/14/2018 09:31 AM

**Work Order:** 18121006  
**Lab ID:** 18121006-06  
**Matrix:** SOIL

| Analyses                | Result | Qual | MDL                    | Report Limit | Units                    | Dilution Factor | Date Analyzed       |
|-------------------------|--------|------|------------------------|--------------|--------------------------|-----------------|---------------------|
| <b>METALS BY ICP-MS</b> |        |      | Method: <b>SW6020A</b> |              | Prep: SW3050B / 12/17/18 |                 | Analyst: <b>STP</b> |
| Arsenic                 | 4.2    |      | 0.081                  | 0.55         | mg/Kg-dry                | 1               | 12/17/2018 16:31    |
| <b>MOISTURE</b>         |        |      | Method: <b>SW3550C</b> |              |                          |                 | Analyst: <b>KTP</b> |
| Moisture                | 32     |      | 0.10                   | 0.10         | % of sample              | 1               | 12/17/2018 15:15    |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 19-Dec-18

**Client:** XTO Energy  
**Project:** YCF 35-12  
**Sample ID:** Background As #7  
**Collection Date:** 12/14/2018 09:42 AM

**Work Order:** 18121006  
**Lab ID:** 18121006-07  
**Matrix:** SOIL

| Analyses                | Result | Qual | MDL                    | Report Limit | Units                    | Dilution Factor | Date Analyzed       |
|-------------------------|--------|------|------------------------|--------------|--------------------------|-----------------|---------------------|
| <b>METALS BY ICP-MS</b> |        |      | Method: <b>SW6020A</b> |              | Prep: SW3050B / 12/17/18 |                 | Analyst: <b>STP</b> |
| Arsenic                 | 4.0    |      | 0.071                  | 0.48         | mg/Kg-dry                | 1               | 12/17/2018 16:38    |
| <b>MOISTURE</b>         |        |      | Method: <b>SW3550C</b> |              |                          |                 | Analyst: <b>KTP</b> |
| Moisture                | 26     |      | 0.10                   | 0.10         | % of sample              | 1               | 12/17/2018 15:15    |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

Client: XTO Energy  
 Work Order: 18121006  
 Project: YCF 35-12

**QC BATCH REPORT**

Batch ID: **129481** Instrument ID **ICPMS3** Method: **SW6020A**

|             |        |                                      |         |                       |      |                              |               |   |           |      |
|-------------|--------|--------------------------------------|---------|-----------------------|------|------------------------------|---------------|---|-----------|------|
| <b>MBLK</b> |        | Sample ID: <b>MBLK-129481-129481</b> |         |                       |      | Units: <b>mg/Kg</b>          |               | Analysis Date: <b>12/17/2018 04:19 PM</b> |           |      |
| Client ID:  |        | Run ID: <b>ICPMS3_181217A</b>        |         | SeqNo: <b>5442182</b> |      | Prep Date: <b>12/17/2018</b> |               | DF: <b>1</b>                              |           |      |
| Analyte     | Result | PQL                                  | SPK Val | SPK Ref Value         | %REC | Control Limit                | RPD Ref Value | %RPD                                      | RPD Limit | Qual |

Arsenic U 0.25

|            |        |                                     |         |                       |      |                              |               |   |           |      |
|------------|--------|-------------------------------------|---------|-----------------------|------|------------------------------|---------------|---|-----------|------|
| <b>LCS</b> |        | Sample ID: <b>LCS-129481-129481</b> |         |                       |      | Units: <b>mg/Kg</b>          |               | Analysis Date: <b>12/17/2018 04:20 PM</b> |           |      |
| Client ID: |        | Run ID: <b>ICPMS3_181217A</b>       |         | SeqNo: <b>5442183</b> |      | Prep Date: <b>12/17/2018</b> |               | DF: <b>1</b>                              |           |      |
| Analyte    | Result | PQL                                 | SPK Val | SPK Ref Value         | %REC | Control Limit                | RPD Ref Value | %RPD                                      | RPD Limit | Qual |

Arsenic 5.21 0.25 5 0 104 80-120 0

|            |        |                                 |         |                       |      |                              |               |   |           |      |
|------------|--------|---------------------------------|---------|-----------------------|------|------------------------------|---------------|---|-----------|------|
| <b>MS</b>  |        | Sample ID: <b>1812958-01BMS</b> |         |                       |      | Units: <b>mg/Kg</b>          |               | Analysis Date: <b>12/17/2018 04:47 PM</b> |           |      |
| Client ID: |        | Run ID: <b>ICPMS3_181217A</b>   |         | SeqNo: <b>5442334</b> |      | Prep Date: <b>12/17/2018</b> |               | DF: <b>1</b>                              |           |      |
| Analyte    | Result | PQL                             | SPK Val | SPK Ref Value         | %REC | Control Limit                | RPD Ref Value | %RPD                                      | RPD Limit | Qual |

Arsenic 7.819 0.33 6.536 1.117 103 75-125 0

|            |        |                                  |         |                       |      |                              |               |   |           |      |
|------------|--------|----------------------------------|---------|-----------------------|------|------------------------------|---------------|---|-----------|------|
| <b>MSD</b> |        | Sample ID: <b>1812958-01BMSD</b> |         |                       |      | Units: <b>mg/Kg</b>          |               | Analysis Date: <b>12/17/2018 04:49 PM</b> |           |      |
| Client ID: |        | Run ID: <b>ICPMS3_181217A</b>    |         | SeqNo: <b>5442335</b> |      | Prep Date: <b>12/17/2018</b> |               | DF: <b>1</b>                              |           |      |
| Analyte    | Result | PQL                              | SPK Val | SPK Ref Value         | %REC | Control Limit                | RPD Ref Value | %RPD                                      | RPD Limit | Qual |

Arsenic 7.845 0.33 6.562 1.117 103 75-125 7.819 0.329 20

The following samples were analyzed in this batch:

|              |              |              |
|--------------|--------------|--------------|
| 18121006-01A | 18121006-02A | 18121006-03A |
| 18121006-04A | 18121006-05A | 18121006-06A |
| 18121006-07A |              |              |

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

Client: XTO Energy  
 Work Order: 18121006  
 Project: YCF 35-12

# QC BATCH REPORT

Batch ID: **R251585** Instrument ID **MOIST** Method: **SW3550C**

|             |                                 |     |                       |               |            |               |   |      |           |      |
|-------------|---------------------------------|-----|-----------------------|---------------|------------|---------------|---|------|-----------|------|
| <b>MBLK</b> | Sample ID: <b>WBLKS-R251585</b> |     | Units: % of sample    |               |            |               | Analysis Date: <b>12/17/2018 03:15 PM</b> |      |           |      |
| Client ID:  | Run ID: <b>MOIST_181217B</b>    |     | SeqNo: <b>5443192</b> |               | Prep Date: |               | DF: <b>1</b>                              |      |           |      |
| Analyte     | Result                          | PQL | SPK Val               | SPK Ref Value | %REC       | Control Limit | RPD Ref Value                             | %RPD | RPD Limit | Qual |

Moisture U 0.10

|            |                               |     |                       |               |            |               |   |      |           |      |
|------------|-------------------------------|-----|-----------------------|---------------|------------|---------------|---|------|-----------|------|
| <b>LCS</b> | Sample ID: <b>LCS-R251585</b> |     | Units: % of sample    |               |            |               | Analysis Date: <b>12/17/2018 03:15 PM</b> |      |           |      |
| Client ID: | Run ID: <b>MOIST_181217B</b>  |     | SeqNo: <b>5443191</b> |               | Prep Date: |               | DF: <b>1</b>                              |      |           |      |
| Analyte    | Result                        | PQL | SPK Val               | SPK Ref Value | %REC       | Control Limit | RPD Ref Value                             | %RPD | RPD Limit | Qual |

Moisture 100 0.10 100 0 100 98-102 0

|            |                                   |     |                       |               |            |               |   |      |           |      |
|------------|-----------------------------------|-----|-----------------------|---------------|------------|---------------|---|------|-----------|------|
| <b>DUP</b> | Sample ID: <b>1812991-02C DUP</b> |     | Units: % of sample    |               |            |               | Analysis Date: <b>12/17/2018 03:15 PM</b> |      |           |      |
| Client ID: | Run ID: <b>MOIST_181217B</b>      |     | SeqNo: <b>5443186</b> |               | Prep Date: |               | DF: <b>1</b>                              |      |           |      |
| Analyte    | Result                            | PQL | SPK Val               | SPK Ref Value | %REC       | Control Limit | RPD Ref Value                             | %RPD | RPD Limit | Qual |

Moisture 18.36 0.10 0 0 0 0-0 14.77 21.7 10 R

|            |                                   |     |                       |               |            |               |   |      |           |      |
|------------|-----------------------------------|-----|-----------------------|---------------|------------|---------------|---|------|-----------|------|
| <b>DUP</b> | Sample ID: <b>1812991-04C DUP</b> |     | Units: % of sample    |               |            |               | Analysis Date: <b>12/17/2018 03:15 PM</b> |      |           |      |
| Client ID: | Run ID: <b>MOIST_181217B</b>      |     | SeqNo: <b>5443189</b> |               | Prep Date: |               | DF: <b>1</b>                              |      |           |      |
| Analyte    | Result                            | PQL | SPK Val               | SPK Ref Value | %REC       | Control Limit | RPD Ref Value                             | %RPD | RPD Limit | Qual |

Moisture 14.14 0.10 0 0 0 0-0 14.53 2.72 10

The following samples were analyzed in this batch:

|              |              |              |
|--------------|--------------|--------------|
| 18121006-01A | 18121006-02A | 18121006-03A |
| 18121006-04A | 18121006-05A | 18121006-06A |
| 18121006-07A |              |              |

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



CHAIN OF CUSTODY

Failure to complete all section of this form may delay analysis.

COC number (for client tracking)

| CLIENT CONTACT AND REPORTING INFORMATION                   |  | INVOICE ADDRESS (if other than reporting address) |  | ANALYSIS REQUIRED (suite codes must be listed to attract suite prices) |               |                 |                |                  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|---|--|--|---------------|-----------------|----------------|------------------|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Company Name: XTO Energy Inc                               |  | Company Name: SAME                                |  | BTEX   | TPH (DRO/GRO) | EC, SAR, and pH | Table 910 PAHs | Table 910 Metals | Arsenic |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Project Manager: Jessica Dooling                           |  | Contact Name: SAME                                |  |  |               |                 |                |                  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Address: 21459 CR 5  |  | Address: SAME                                     |  |  |               |                 |                |                  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Rifle, CO  |  |   |  |  |               |                 |                |                  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Phone: 970.675.4122  |  | PROJECT INFORMATION                               |  |  |               |                 |                |                  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Email 1: jessica_dooling@xtoenergy.com                     |  | Project ID: YCF 35-12                             |  |  |               |                 |                |                  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Email 2: cmckisson@ltenv.com                               |  | Site:   |  |  |               |                 |                |                  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SERVICE REQUEST (Express services subject to availability) |  | PO No:  |  |  |               |                 |                |                  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Regular (default)                 |  | ALS Quote No:                                     |  |  |               |                 |                |                  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <input checked="" type="checkbox"/> Express 3 day          |  |   |  |  |               |                 |                |                  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| ALS ID # | SAMPLE IDENTIFICATION<br>(this description will appear on report) | MATRIX (a) | SAMPLING AND CONTAINER INFO |      |            | REMARKS | CROSS THE REQUESTED ANALYSIS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
|----------|---|------------|-----------------------------|------|------------|---------|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|
|          |   |            | Date                        | Time | Tot Bottle |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
|          | Background As #1  | S          | 12/14/2018                  | 0903 | 1          |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |
|          | Background As #2  | S          | 12/14/2018                  | 0907 | 1          |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |
|          | Background As #3  | S          | 12/14/2018                  | 0912 | 1          |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |
|          | Background As #4  | S          | 12/14/2018                  | 0917 | 1          |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |
|          | Background As #5  | S          | 12/14/2018                  | 0923 | 1          |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |
|          | Background As #6  | S          | 12/14/2018                  | 0931 | 1          |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |
|          | Background As #7  | S          | 12/14/2018                  | 0942 | 1          |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |
|          |   |            |                             |      |            |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
|          |   |            |                             |      |            |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
|          |   |            |                             |      |            |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
|          |   |            |                             |      |            |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
|          |   |            |                             |      |            |         |                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |

| CLIENT SIGNATURES                                      |  | For lab use only  |  |   |                                |  |  |
|--|--|---|--|---|--------------------------------|--|--|
| Client's Signature:<br><i>[Signature]</i>              | Cooler Security Seal<br><input type="checkbox"/> sealed<br><input type="checkbox"/> broken<br><input type="checkbox"/> not available | Sample Temp<br><input type="checkbox"/> chilled deg °C<br><input type="checkbox"/> ambient<br>1 | No of Cooler Received<br>carton / cooler box | Received by (lab)<br><i>[Signature]</i> | Date and Time<br>12/15/18 0900 |  |  |
| Client's Date and Time of Completion:<br>12-14-18 1500 |  |   | Courier Name<br>ALS                          | Committed by<br><i>[Signature]</i>      | Date and Time                  |  |  |

Note: (a) DW (Drinking water), SW (Surface water), GW (Ground water), WW (Waste water), S (Soil), SL (Sludge), SE (Sediment), OS (Other solid material)  
 ALS Technichem (HK) Pty Ltd Address: 11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwei Chung, N.T., Hong Kong Tel: +852 2610 1044 Fax: +852 2610 2021 Email: HongKong@alsglobal.com

4.8% SP2

Sample Receipt Checklist

Client Name: **XTO - CO**

Date/Time Received: **15-Dec-18 09:00**

Work Order: **18121006**

Received by: **KRW**

Checklist completed by Keith Wierenga 17-Dec-18  
eSignature Date

Reviewed by: Chad Whelton 17-Dec-18  
eSignature Date

Matrices: Soil  
 Carrier name: FedEx

|   |   |                             |  |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?      | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/>            |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sample(s) received on ice?                              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Temperature(s)/Thermometer(s):                          | <u>4.8/4.8 C</u>                        |                             | <u>SR2</u>   |
| Cooler(s)/Kit(s):                                       | <u> </u>                                |                             |  |
| Date/Time sample(s) sent to storage:                    | <u>12/17/2018 9:12:24 AM</u>            |                             |  |
| Water - VOA vials have zero headspace?                  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?                     | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/>                    |
| pH adjusted?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/>                    |
| pH adjusted by:   | <u> </u>                                |                             |  |

Login Notes:



Client Contacted: \_\_\_\_\_ Date Contacted: \_\_\_\_\_ Person Contacted: \_\_\_\_\_

Contacted By: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments:

CorrectiveAction:



09-Jan-2019

Jessica Dooling  
XTO Energy  
21459 CR5  
Rifle, CO 81650

Re: **YCF 35-12-1**

Work Order: **1901243**

Dear Jessica,

ALS Environmental received 1 sample on 05-Jan-2019 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 8.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA  
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton", is written over a light blue horizontal line.

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager

## Report of Laboratory Analysis

Certificate No: MN 026-999-449

*ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company*

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** XTO Energy  
**Project:** YCF 35-12-1  
**Work Order:** 1901243

**Work Order Sample Summary**

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| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u>              |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 1901243-01         | As - Spill Area         | Soil          |                   | 1/4/2019 11:45         | 1/5/2019 10:00       | <input type="checkbox"/> |

**Client:** XTO Energy  
**Project:** YCF 35-12-1  
**WorkOrder:** 1901243

**QUALIFIERS,  
ACRONYMS, UNITS**

| <u>Qualifier</u> | <u>Description</u>  |
|------------------|---|
| *                | Value exceeds Regulatory Limit  |
| **               | Estimated Value   |
| a                | Analyte is non-accredited   |
| B                | Analyte detected in the associated Method Blank above the Reporting Limit   |
| E                | Value above quantitation range  |
| H                | Analyzed outside of Holding Time  |
| Hr               | BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.  |
| J                | Analyte is present at an estimated concentration between the MDL and Report Limit   |
| 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   |
| X                | Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level. |

| <u>Acronym</u> | <u>Description</u>                  |
|----------------|-------------------------------------|
| DUP            | Method Duplicate                    |
| LCS            | Laboratory Control Sample           |
| LCSD           | Laboratory Control Sample Duplicate |
| LOD            | Limit of Detection (see MDL)        |
| LOQ            | Limit of Quantitation (see PQL)     |
| MBLK           | Method Blank                        |
| MDL            | Method Detection Limit              |
| MS             | Matrix Spike                        |
| MSD            | Matrix Spike Duplicate              |
| PQL            | Practical Quantitation Limit        |
| RPD            | Relative Percent Difference         |
| TDL            | Target Detection Limit              |
| TNTC           | Too Numerous To Count               |
| A              | APHA Standard Methods               |
| D              | ASTM                                |
| E              | EPA                                 |
| SW             | SW-846 Update III                   |

| <u>Units Reported</u> | <u>Description</u>                 |
|-----------------------|------------------------------------|
| % of sample           | Percent of Sample                  |
| mg/Kg-dry             | Milligrams per Kilogram Dry Weight |

# ALS Group, USA

Date: 09-Jan-19

**Client:** XTO Energy  
**Project:** YCF 35-12-1  
**Sample ID:** As - Spill Area  
**Collection Date:** 1/4/2019 11:45 AM

**Work Order:** 1901243  
**Lab ID:** 1901243-01  
**Matrix:** SOIL

| Analyses                | Result | Qual | MDL                    | Report Limit | Units                  | Dilution Factor | Date Analyzed       |
|-------------------------|--------|------|------------------------|--------------|------------------------|-----------------|---------------------|
| <b>METALS BY ICP-MS</b> |        |      | Method: <b>SW6020A</b> |              | Prep: SW3050B / 1/8/19 |                 | Analyst: <b>STP</b> |
| Arsenic                 | 11     |      | 0.070                  | 0.47         | mg/Kg-dry              | 1               | 1/8/2019 13:21      |
| <b>MOISTURE</b>         |        |      | Method: <b>SW3550C</b> |              |                        |                 | Analyst: <b>KTP</b> |
| Moisture                | 19     |      | 0.10                   | 0.10         | % of sample            | 1               | 1/7/2019 14:21      |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

Client: XTO Energy  
 Work Order: 1901243  
 Project: YCF 35-12-1

**QC BATCH REPORT**

Batch ID: **130401** Instrument ID **ICPMS3** Method: **SW6020A**

|             |        |                                      |         |                       |      |                            |               |   |           |      |
|-------------|--------|--------------------------------------|---------|-----------------------|------|----------------------------|---------------|---|-----------|------|
| <b>MBLK</b> |        | Sample ID: <b>MBLK-130401-130401</b> |         |                       |      | Units: <b>mg/Kg</b>        |               | Analysis Date: <b>1/8/2019 01:12 PM</b> |           |      |
| Client ID:  |        | Run ID: <b>ICPMS3_190108A</b>        |         | SeqNo: <b>5473010</b> |      | Prep Date: <b>1/8/2019</b> |               | DF: <b>1</b>                            |           |      |
| Analyte     | Result | PQL                                  | SPK Val | SPK Ref Value         | %REC | Control Limit              | RPD Ref Value | %RPD                                    | RPD Limit | Qual |

Arsenic U 0.25

|            |        |                                     |         |                       |      |                            |               |   |           |      |
|------------|--------|-------------------------------------|---------|-----------------------|------|----------------------------|---------------|---|-----------|------|
| <b>LCS</b> |        | Sample ID: <b>LCS-130401-130401</b> |         |                       |      | Units: <b>mg/Kg</b>        |               | Analysis Date: <b>1/8/2019 01:13 PM</b> |           |      |
| Client ID: |        | Run ID: <b>ICPMS3_190108A</b>       |         | SeqNo: <b>5473011</b> |      | Prep Date: <b>1/8/2019</b> |               | DF: <b>1</b>                            |           |      |
| Analyte    | Result | PQL                                 | SPK Val | SPK Ref Value         | %REC | Control Limit              | RPD Ref Value | %RPD                                    | RPD Limit | Qual |

Arsenic 5.004 0.25 5 0 100 80-120 0

|            |        |                                 |         |                       |      |                            |               |   |           |      |
|------------|--------|---------------------------------|---------|-----------------------|------|----------------------------|---------------|---|-----------|------|
| <b>MS</b>  |        | Sample ID: <b>1901240-01AMS</b> |         |                       |      | Units: <b>mg/Kg</b>        |               | Analysis Date: <b>1/8/2019 01:17 PM</b> |           |      |
| Client ID: |        | Run ID: <b>ICPMS3_190108A</b>   |         | SeqNo: <b>5473013</b> |      | Prep Date: <b>1/8/2019</b> |               | DF: <b>1</b>                            |           |      |
| Analyte    | Result | PQL                             | SPK Val | SPK Ref Value         | %REC | Control Limit              | RPD Ref Value | %RPD                                    | RPD Limit | Qual |

Arsenic 11.73 0.38 7.622 4.375 96.5 75-125 0

|            |        |                                  |         |                       |      |                            |               |   |           |      |
|------------|--------|----------------------------------|---------|-----------------------|------|----------------------------|---------------|---|-----------|------|
| <b>MSD</b> |        | Sample ID: <b>1901240-01AMSD</b> |         |                       |      | Units: <b>mg/Kg</b>        |               | Analysis Date: <b>1/8/2019 01:19 PM</b> |           |      |
| Client ID: |        | Run ID: <b>ICPMS3_190108A</b>    |         | SeqNo: <b>5473014</b> |      | Prep Date: <b>1/8/2019</b> |               | DF: <b>1</b>                            |           |      |
| Analyte    | Result | PQL                              | SPK Val | SPK Ref Value         | %REC | Control Limit              | RPD Ref Value | %RPD                                    | RPD Limit | Qual |

Arsenic 10.87 0.38 7.645 4.375 85 75-125 11.73 7.61 20

The following samples were analyzed in this batch: 1901243-01A

Client: XTO Energy  
 Work Order: 1901243  
 Project: YCF 35-12-1

# QC BATCH REPORT

Batch ID: **R252767** Instrument ID **MOIST** Method: **SW3550C**

|             |                                 |     |         |                       |                    |               |               |   |           |      |
|-------------|---------------------------------|-----|---------|-----------------------|--------------------|---------------|---------------|---|-----------|------|
| <b>MBLK</b> | Sample ID: <b>WBLKS-R252767</b> |     |         |                       | Units: % of sample |               |               | Analysis Date: <b>1/7/2019 02:21 PM</b> |           |      |
| Client ID:  | Run ID: <b>MOIST_190107B</b>    |     |         | SeqNo: <b>5472483</b> |                    | Prep Date:    |               | DF: <b>1</b>                            |           |      |
| Analyte     | Result                          | PQL | SPK Val | SPK Ref Value         | %REC               | Control Limit | RPD Ref Value | %RPD                                    | RPD Limit | Qual |

Moisture U 0.10

|            |                               |     |         |                       |                    |               |               |   |           |      |
|------------|-------------------------------|-----|---------|-----------------------|--------------------|---------------|---------------|---|-----------|------|
| <b>LCS</b> | Sample ID: <b>LCS-R252767</b> |     |         |                       | Units: % of sample |               |               | Analysis Date: <b>1/7/2019 02:21 PM</b> |           |      |
| Client ID: | Run ID: <b>MOIST_190107B</b>  |     |         | SeqNo: <b>5472482</b> |                    | Prep Date:    |               | DF: <b>1</b>                            |           |      |
| Analyte    | Result                        | PQL | SPK Val | SPK Ref Value         | %REC               | Control Limit | RPD Ref Value | %RPD                                    | RPD Limit | Qual |

Moisture 100 0.10 100 0 100 98-102 0

|            |                                   |     |         |                       |                    |               |               |   |           |      |
|------------|-----------------------------------|-----|---------|-----------------------|--------------------|---------------|---------------|---|-----------|------|
| <b>DUP</b> | Sample ID: <b>1901236-06A DUP</b> |     |         |                       | Units: % of sample |               |               | Analysis Date: <b>1/7/2019 02:21 PM</b> |           |      |
| Client ID: | Run ID: <b>MOIST_190107B</b>      |     |         | SeqNo: <b>5472467</b> |                    | Prep Date:    |               | DF: <b>1</b>                            |           |      |
| Analyte    | Result                            | PQL | SPK Val | SPK Ref Value         | %REC               | Control Limit | RPD Ref Value | %RPD                                    | RPD Limit | Qual |

Moisture 21.08 0.10 0 0 0 0-0 20.66 2.01 10

|            |                                   |     |         |                       |                    |               |               |   |           |      |
|------------|-----------------------------------|-----|---------|-----------------------|--------------------|---------------|---------------|---|-----------|------|
| <b>DUP</b> | Sample ID: <b>1901240-01A DUP</b> |     |         |                       | Units: % of sample |               |               | Analysis Date: <b>1/7/2019 02:21 PM</b> |           |      |
| Client ID: | Run ID: <b>MOIST_190107B</b>      |     |         | SeqNo: <b>5472470</b> |                    | Prep Date:    |               | DF: <b>1</b>                            |           |      |
| Analyte    | Result                            | PQL | SPK Val | SPK Ref Value         | %REC               | Control Limit | RPD Ref Value | %RPD                                    | RPD Limit | Qual |

Moisture 8.27 0.10 0 0 0 0-0 8.1 2.08 10

The following samples were analyzed in this batch: 1901243-01A

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



Sample Receipt Checklist

Client Name: **XTO - CO**

Date/Time Received: **05-Jan-19 10:00**

Work Order: **1901243**

Received by: **BNF**

Checklist completed by *Lernina France* 07-Jan-19  
eSignature Date

Reviewed by: *Chad Whilton* 08-Jan-19  
eSignature Date

Matrices: Soil  
 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"/>            |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sample(s) received on ice?                              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Temperature(s)/Thermometer(s):                          | <u>3.6/3.6 C</u>                        |                             | <u>SR2</u>   |
| Cooler(s)/Kit(s):                                       | <u>1</u>                                |                             |  |
| Date/Time sample(s) sent to storage:                    | <u>1/7/2019 10:33:10 AM</u>             |                             |  |
| Water - VOA vials have zero headspace?                  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?                     | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/>                    |
| pH adjusted?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/>                    |
| pH adjusted by:   | <u> </u>                                |                             |  |

Login Notes:



Client Contacted: \_\_\_\_\_ Date Contacted: \_\_\_\_\_ Person Contacted: \_\_\_\_\_

Contacted By: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments:

CorrectiveAction: