20-Nov-2019

Andre Baker
Tetra Tech EM Inc.
1 South Wacker Dr
Suite 3700
Chicago, IL 60606

Re: **Joliet Fire** Work Order: **19111428**

Dear Andre,

ALS Environmental received 2 samples on 19-Nov-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 10.

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,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

# ALS Group, USA

Date: 20-Nov-19

**Client:** Tetra Tech EM Inc.
**Project:** Joliet Fire
**Work Order:** **19111428**

## Work Order Sample Summary

| Lab Samp ID | Client Sample ID | Matrix | Tag Number | Collection Date | Date Received | Hold |
|---|---|---|---|---|---|---|
| 19111428-01 | MPGI-PP-Soil-01-111819 | Soil | | 11/18/2019 11:00 | 11/19/2019 10:00 | ☐ |
| 19111428-02 | MPGI-PP-Soil-02-111819 | Soil | | 11/18/2019 11:02 | 11/19/2019 10:00 | ☐ |

# ALS Group, USA

*Date: 20-Nov-19*

**Client:** Tetra Tech EM Inc.
**Project:** Joliet Fire
**Work Order:** 19111428

## Case Narrative

Samples for the above noted Work Order were received on 11/19/2019. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Extractable Organics:
No other deviations or anomalies were noted.

Wet Chemistry:
No other deviations or anomalies were noted.

# ALS Group, USA

Date: 20-Nov-19

**Client:** Tetra Tech EM Inc.
**Project:** Joliet Fire
**WorkOrder:** **19111428**

## QUALIFIERS, ACRONYMS, UNITS

| Qualifier | Description |
|---|---|
| * | 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. |

| Acronym | Description |
|---|---|
| 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 |

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

# ALS Group, USA

**Date:** *20-Nov-19*

**Client:** Tetra Tech EM Inc.
**Project:** Joliet Fire
**Sample ID:** MPGI-PP-Soil-01-111819
**Collection Date:** 11/18/2019 11:00 AM

**Work Order:** 19111428
**Lab ID:** 19111428-01
**Matrix:** SOIL

| Analyses | Result | Qual | MDL | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **DIESEL RANGE ORGANICS BY GC-FID** | | Method: | **SW8015M** | | Prep: SW3550 / 11/19/19 | | Analyst: **BCM** |
| DRO (C10-C28) | U | | 3.4 | 5.9 | mg/Kg-dry | 1 | 11/19/2019 20:55 |
| *Surr: 4-Terphenyl-d14* | *58.5* | | | *33-111* | *%REC* | 1 | 11/19/2019 20:55 |
| **MOISTURE** | | Method: | **SW3550C** | | | | Analyst: **KTP** |
| **Moisture** | **17** | | **0.10** | **0.10** | **% of sample** | 1 | 11/19/2019 16:07 |

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

# ALS Group, USA

**Date:** *20-Nov-19*

**Client:** Tetra Tech EM Inc.
**Project:** Joliet Fire
**Sample ID:** MPGI-PP-Soil-02-111819
**Collection Date:** 11/18/2019 11:02 AM

**Work Order:** 19111428
**Lab ID:** 19111428-02
**Matrix:** SOIL

| Analyses | Result | Qual | MDL | Report Limit | Units | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **DIESEL RANGE ORGANICS BY GC-FID** | | Method: | **SW8015M** | | Prep: SW3550 / 11/19/19 | | Analyst: **BCM** |
| **DRO (C10-C28)** | **17** | | **4.1** | **7.3** | **mg/Kg-dry** | 1 | 11/19/2019 18:58 |
| *Surr: 4-Terphenyl-d14* | *67.4* | | | *33-111* | *%REC* | 1 | 11/19/2019 18:58 |
| **MOISTURE** | | Method: | **SW3550C** | | | | Analyst: **KTP** |
| **Moisture** | **31** | | **0.10** | **0.10** | **% of sample** | 1 | 11/19/2019 16:07 |

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

ALS Group, USA

Date: 20-Nov-19

**Client:** Tetra Tech EM Inc.
**Work Order:** 19111428
**Project:** Joliet Fire

# QC BATCH REPORT

Batch ID: **145838** Instrument ID **GC8** Method: **SW8015M**

**MBLK** Sample ID: **DBLKS1-145838-145838** Units: **mg/Kg** Analysis Date: **11/19/2019 05:02 P**

Client ID: Run ID: **GC8_191119A** SeqNo: **6070431** Prep Date: **11/19/2019** DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| DRO (C10-C28) | U | 5.0 | | | | | | | | |
| *Surr: 4-Terphenyl-d14* | *2.371* | 0 | *3.33* | 0 | *71.2* | *33-111* | 0 | | | |

**LCS** Sample ID: **DLCSS1-145838-145838** Units: **mg/Kg** Analysis Date: **11/19/2019 05:31 P**

Client ID: Run ID: **GC8_191119A** SeqNo: **6070432** Prep Date: **11/19/2019** DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| DRO (C10-C28) | 354.3 | 5.0 | 333 | 0 | 106 | 58-111 | 0 | | | |
| *Surr: 4-Terphenyl-d14* | *2.173* | 0 | *3.33* | 0 | *65.2* | *33-111* | 0 | | | |

**MS** Sample ID: **19111428-02A MS** Units: **mg/Kg** Analysis Date: **11/19/2019 06:00 P**

Client ID: **MPGI-PP-Soil-02-111819** Run ID: **GC8_191119A** SeqNo: **6070433** Prep Date: **11/19/2019** DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| DRO (C10-C28) | 369.5 | 5.0 | 332.2 | 11.57 | 108 | 58-111 | 0 | | | |
| *Surr: 4-Terphenyl-d14* | *1.989* | 0 | *3.322* | 0 | *59.9* | *33-111* | 0 | | | |

**MSD** Sample ID: **19111428-02A MSD** Units: **mg/Kg** Analysis Date: **11/19/2019 06:29 P**

Client ID: **MPGI-PP-Soil-02-111819** Run ID: **GC8_191119A** SeqNo: **6070434** Prep Date: **11/19/2019** DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| DRO (C10-C28) | 352.3 | 4.9 | 329.3 | 11.57 | 103 | 58-111 | 369.5 | 4.77 | 30 | |
| *Surr: 4-Terphenyl-d14* | *1.936* | 0 | *3.293* | 0 | *58.8* | *33-111* | 1.989 | *2.7* | *30* | |

**The following samples were analyzed in this batch:**

| | |
|---|---|
| 19111428-01A | 19111428-02A |

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

**Client:** Tetra Tech EM Inc.
**Work Order:** 19111428
**Project:** Joliet Fire

# QC BATCH REPORT

Batch ID: **R275778** Instrument ID **MOIST** Method: **SW3550C**

**MBLK** Sample ID: **WBLKS-R275778** Units: **% of sample** Analysis Date: **11/19/2019 04:07 P**

Client ID: Run ID: **MOIST_191119D** SeqNo: **6070874** Prep Date: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Moisture | U | 0.10 | | | | | | | | |

**LCS** Sample ID: **LCS-R275778** Units: **% of sample** Analysis Date: **11/19/2019 04:07 P**

Client ID: Run ID: **MOIST_191119D** SeqNo: **6070873** Prep Date: DF: **1**

| 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 | | | |

**DUP** Sample ID: **19111050-46A DUP** Units: **% of sample** Analysis Date: **11/19/2019 04:07 P**

Client ID: Run ID: **MOIST_191119D** SeqNo: **6070858** Prep Date: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Moisture | 22.92 | 0.10 | 0 | 0 | 0 | 0-0 | 21.71 | 5.42 | 10 | |

**DUP** Sample ID: **19111428-02A DUP** Units: **% of sample** Analysis Date: **11/19/2019 04:07 P**

Client ID: **MPGI-PP-Soil-02-111819** Run ID: **MOIST_191119D** SeqNo: **6070872** Prep Date: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Moisture | 31.19 | 0.10 | 0 | 0 | 0 | 0-0 | 31.31 | 0.384 | 10 | |

**The following samples were analyzed in this batch:**

| | |
|---|---|
| 19111428-01A | 19111428-02A |

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

19111428

ALS Environmental

# CHAIN OF CUSTODY

ALS Laboratory: please tick →

| | | |
|---|---|---|
| CLIENT: Tetra Tech | TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g. Ultra Trace Organics) | ☐ Standard TAT (List due date): |
| OFFICE: Chicago | | X Non Standard or urgent TAT (List due date): 24 Hr TAT |
| PROJECT: 103x903100690002aj001 | ALS QUOTE NO.: | |
| ORDER NUMBER: ALS-1 Mod. 2 | | COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 |
| PROJECT MANAGER: Andre Baker | CONTACT PH: 6303793749 | OF: 1 2 3 4 5 6 7 |
| SAMPLER: Brendan Martin | SAMPLER MOBILE: | |
| COC emailed to ALS? ( NO ) | EDD FORMAT (or default): | |
| Email Reports to Andre.baker@tetratech.com, Brendan.martin@tetratech.com | | |
| Email Invoice to (will default to PM if no other addresses are listed): | | |

FOR LABORATORY USE ONLY (Circle)

| | | | |
|---|---|---|---|
| Custody Seal Intact? | Yes | No | N/A |
| Free ice / frozen ice bricks present upon receipt? | Yes | No | N/A |
| Random Sample Temperature on Receipt: | | °C | |
| Other comments: | | | |

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Brendan Martin | FED EX | FED EX | [illegible] |
| DATE/TIME: 11/18/19 1450 | DATE/TIME: | DATE/TIME: | DATE/TIME: 11/19/19 1000 |

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: SR22 3.4°C

| ALS USE | SAMPLE DETAILS MATRIX: SOLID (S) WATER (W) | | | CONTAINER INFORMATION | | ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required). | | | | | | | | Additional Information |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAB ID | SAMPLE ID | DATE / TIME | MATRIX | TYPE & PRESERVATIVE (refer to codes below) | TOTAL CONTAINERS | TPH-DRO/SW8015 | Percent Solids | | | | | | | |
| 1 | MPGI-PP-Soil-01-~~141840~~ 11/18/19 PM | 11/18/19, 1100 | Soil | None | 1 | X | X | | | | | | | |
| 2 | MPGI-PP-Soil-02-~~141840~~ 11/18/19 PM | 11/18/19, 1102 | Soil | None | 2 | X | X | | | | | | | Extra container for MS/MSD |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | TOTAL | 3 | | | | | | | | | |

*Water Container Codes:* P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

ALS Group, USA

## Sample Receipt Checklist

Client Name: **TETRATECH-EM-CHI** Date/Time Received: **19-Nov-19 10:00**

Work Order: **19111428** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 19-Nov-19 (Date) Reviewed by: Chad Whelton (eSignature) 19-Nov-19 (Date)

Matrices: Soil
Carrier name: FedEx

| | Yes | No | Not Present |
|---|---|---|---|
| Shipping container/cooler in good condition? | ☑ | ☐ | ☐ |
| Custody seals intact on shipping container/cooler? | ☐ | ☐ | ☑ |
| Custody seals intact on sample bottles? | ☐ | ☐ | ☑ |
| Chain of custody present? | ☑ | ☐ | |
| Chain of custody signed when relinquished and received? | ☑ | ☐ | |
| Chain of custody agrees with sample labels? | ☑ | ☐ | |
| Samples in proper container/bottle? | ☑ | ☐ | |
| Sample containers intact? | ☑ | ☐ | |
| Sufficient sample volume for indicated test? | ☑ | ☐ | |
| All samples received within holding time? | ☑ | ☐ | |
| Container/Temp Blank temperature in compliance? | ☑ | ☐ | |
| Sample(s) received on ice? | ☑ | ☐ | |

Temperature(s)/Thermometer(s): 3.4/3.4 c SR2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 11/19/2019 1:40:16 PM

| | Yes | No | | |
|---|---|---|---|---|
| Water - VOA vials have zero headspace? | ☐ | ☐ | No VOA vials submitted | ☑ |
| Water - pH acceptable upon receipt? | ☐ | ☐ | N/A | ☑ |
| pH adjusted? | ☐ | ☐ | N/A | ☑ |

pH adjusted by: -

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: