

## ANALYTICAL REPORT

Eurofins TestAmerica, Canton  
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North Canton, OH 44720  
Tel: (330)497-9396

Laboratory Job ID: 240-134685-1  
Client Project/Site: Ford LTP Off-Site

For:  
ARCADIS U.S., Inc.  
28550 Cabot Drive  
Suite 500  
Novi, Michigan 48377

Attn: Kristoffer Hinskey



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Authorized for release by:  
8/21/2020 10:51:00 AM

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Definitions/Glossary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description                                    |
|-----------|--|
| U         | Indicates the analyte was analyzed for but not detected. |
| X         | Surrogate recovery exceeds control limits                |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| ▫              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Case Narrative

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

**Job ID: 240-134685-1**

**Laboratory: Eurofins TestAmerica, Canton**

**Narrative**

## CASE NARRATIVE

**Client: ARCADIS U.S., Inc.**

**Project: Ford LTP Off-Site**

**Report Number: 240-134685-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, Canton attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

### **RECEIPT**

The samples were received on 8/8/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.3° C.

### **VOLATILE ORGANIC COMPOUNDS (GCMS)**

Samples TRIP BLANK (240-134685-1), MW-139S\_080620 (240-134685-2), MW-141S\_080620 (240-134685-3) and MW-140S\_080620 (240-134685-4) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/18/2020.

Dibromofluoromethane (Surr) failed the surrogate recovery criteria high for MB 240-447614/6. Refer to the QC report for details.

The continuing calibration verification (CCV) associated with batch 447614 recovered above the upper control limit for Vinyl Chloride. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The associated samples are impacted: TRIP BLANK (240-134685-1), MW-139S\_080620 (240-134685-2), MW-141S\_080620 (240-134685-3) and MW-140S\_080620 (240-134685-4).

Surrogate recovery for the method blank was outside the upper control limit: (MB 240-447614/6). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No MS/MSD in batch 447614 due to MSD exceeding 12 hour tune time window: TRIP BLANK (240-134685-1), MW-139S\_080620

# Case Narrative

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

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## Job ID: 240-134685-1 (Continued)

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### Laboratory: Eurofins TestAmerica, Canton (Continued)

(240-134685-2), MW-141S\_080620 (240-134685-3) and MW-140S\_080620 (240-134685-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-139S\_080620 (240-134685-2), MW-141S\_080620 (240-134685-3) and MW-140S\_080620 (240-134685-4) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/14/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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- 14

# Method Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

| Method    | Method Description                 | Protocol | Laboratory |
|-----------|------------------------------------|----------|------------|
| 8260B     | Volatile Organic Compounds (GC/MS) | SW846    | TAL CAN    |
| 8260B SIM | Volatile Organic Compounds (GC/MS) | SW846    | TAL CAN    |
| 5030B     | Purge and Trap                     | SW846    | TAL CAN    |

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396



# Sample Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       | Asset ID |
|---------------|------------------|--------|----------------|----------------|----------|
| 240-134685-1  | TRIP BLANK       | Water  | 08/06/20 00:00 | 08/08/20 10:00 |          |
| 240-134685-2  | MW-139S_080620   | Water  | 08/06/20 09:30 | 08/08/20 10:00 |          |
| 240-134685-3  | MW-141S_080620   | Water  | 08/06/20 10:24 | 08/08/20 10:00 |          |
| 240-134685-4  | MW-140S_080620   | Water  | 08/06/20 11:35 | 08/08/20 10:00 |          |

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- 10
- 11
- 12
- 13
- 14

# Detection Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-134685-1**

No Detections.

**Client Sample ID: MW-139S\_080620**

**Lab Sample ID: 240-134685-2**

No Detections.

**Client Sample ID: MW-141S\_080620**

**Lab Sample ID: 240-134685-3**

No Detections.

**Client Sample ID: MW-140S\_080620**

**Lab Sample ID: 240-134685-4**

No Detections.

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- 2
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- 10
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- 12
- 13
- 14

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton



# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-134685-1**

**Date Collected: 08/06/20 00:00**

**Matrix: Water**

**Date Received: 08/08/20 10:00**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

| Analyte                  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene       | 1.0    | U         | 1.0 | 0.46 | ug/L |   |          | 08/18/20 17:09 | 1       |
| cis-1,2-Dichloroethene   | 1.0    | U         | 1.0 | 0.38 | ug/L |   |          | 08/18/20 17:09 | 1       |
| Tetrachloroethene        | 1.0    | U         | 1.0 | 0.33 | ug/L |   |          | 08/18/20 17:09 | 1       |
| trans-1,2-Dichloroethene | 1.0    | U         | 1.0 | 0.43 | ug/L |   |          | 08/18/20 17:09 | 1       |
| Trichloroethene          | 1.0    | U         | 1.0 | 0.36 | ug/L |   |          | 08/18/20 17:09 | 1       |
| Vinyl chloride           | 1.0    | U         | 1.0 | 0.50 | ug/L |   |          | 08/18/20 17:09 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 98        |           | 75 - 130 |          | 08/18/20 17:09 | 1       |
| 4-Bromofluorobenzene (Surr)  | 95        |           | 47 - 134 |          | 08/18/20 17:09 | 1       |
| Toluene-d8 (Surr)            | 100       |           | 69 - 122 |          | 08/18/20 17:09 | 1       |
| Dibromofluoromethane (Surr)  | 117       |           | 78 - 129 |          | 08/18/20 17:09 | 1       |

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

**Client Sample ID: MW-139S\_080620**

**Lab Sample ID: 240-134685-2**

**Date Collected: 08/06/20 09:30**

**Matrix: Water**

**Date Received: 08/08/20 10:00**

**Method: 8260B SIM - Volatile Organic Compounds (GC/MS)**

| Analyte     | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,4-Dioxane | 2.0    | U         | 2.0 | 0.86 | ug/L |   |          | 08/14/20 15:46 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 85        |           | 70 - 133 |          | 08/14/20 15:46 | 1       |

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

| Analyte                  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene       | 1.0    | U         | 1.0 | 0.46 | ug/L |   |          | 08/18/20 17:31 | 1       |
| cis-1,2-Dichloroethene   | 1.0    | U         | 1.0 | 0.38 | ug/L |   |          | 08/18/20 17:31 | 1       |
| Tetrachloroethene        | 1.0    | U         | 1.0 | 0.33 | ug/L |   |          | 08/18/20 17:31 | 1       |
| trans-1,2-Dichloroethene | 1.0    | U         | 1.0 | 0.43 | ug/L |   |          | 08/18/20 17:31 | 1       |
| Trichloroethene          | 1.0    | U         | 1.0 | 0.36 | ug/L |   |          | 08/18/20 17:31 | 1       |
| Vinyl chloride           | 1.0    | U         | 1.0 | 0.50 | ug/L |   |          | 08/18/20 17:31 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 86        |           | 75 - 130 |          | 08/18/20 17:31 | 1       |
| 4-Bromofluorobenzene (Surr)  | 86        |           | 47 - 134 |          | 08/18/20 17:31 | 1       |
| Toluene-d8 (Surr)            | 90        |           | 69 - 122 |          | 08/18/20 17:31 | 1       |
| Dibromofluoromethane (Surr)  | 103       |           | 78 - 129 |          | 08/18/20 17:31 | 1       |

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

**Client Sample ID: MW-141S\_080620**

**Lab Sample ID: 240-134685-3**

**Date Collected: 08/06/20 10:24**

**Matrix: Water**

**Date Received: 08/08/20 10:00**

**Method: 8260B SIM - Volatile Organic Compounds (GC/MS)**

| Analyte     | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,4-Dioxane | 2.0    | U         | 2.0 | 0.86 | ug/L |   |          | 08/14/20 16:12 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 88        |           | 70 - 133 |          | 08/14/20 16:12 | 1       |

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

| Analyte                  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene       | 1.0    | U         | 1.0 | 0.46 | ug/L |   |          | 08/18/20 17:54 | 1       |
| cis-1,2-Dichloroethene   | 1.0    | U         | 1.0 | 0.38 | ug/L |   |          | 08/18/20 17:54 | 1       |
| Tetrachloroethene        | 1.0    | U         | 1.0 | 0.33 | ug/L |   |          | 08/18/20 17:54 | 1       |
| trans-1,2-Dichloroethene | 1.0    | U         | 1.0 | 0.43 | ug/L |   |          | 08/18/20 17:54 | 1       |
| Trichloroethene          | 1.0    | U         | 1.0 | 0.36 | ug/L |   |          | 08/18/20 17:54 | 1       |
| Vinyl chloride           | 1.0    | U         | 1.0 | 0.50 | ug/L |   |          | 08/18/20 17:54 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 96        |           | 75 - 130 |          | 08/18/20 17:54 | 1       |
| 4-Bromofluorobenzene (Surr)  | 96        |           | 47 - 134 |          | 08/18/20 17:54 | 1       |
| Toluene-d8 (Surr)            | 98        |           | 69 - 122 |          | 08/18/20 17:54 | 1       |
| Dibromofluoromethane (Surr)  | 114       |           | 78 - 129 |          | 08/18/20 17:54 | 1       |

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

**Client Sample ID: MW-140S\_080620**

**Lab Sample ID: 240-134685-4**

**Date Collected: 08/06/20 11:35**

**Matrix: Water**

**Date Received: 08/08/20 10:00**

**Method: 8260B SIM - Volatile Organic Compounds (GC/MS)**

| Analyte     | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,4-Dioxane | 2.0    | U         | 2.0 | 0.86 | ug/L |   |          | 08/14/20 16:37 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 96        |           | 70 - 133 |          | 08/14/20 16:37 | 1       |

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

| Analyte                  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene       | 1.0    | U         | 1.0 | 0.46 | ug/L |   |          | 08/18/20 18:16 | 1       |
| cis-1,2-Dichloroethene   | 1.0    | U         | 1.0 | 0.38 | ug/L |   |          | 08/18/20 18:16 | 1       |
| Tetrachloroethene        | 1.0    | U         | 1.0 | 0.33 | ug/L |   |          | 08/18/20 18:16 | 1       |
| trans-1,2-Dichloroethene | 1.0    | U         | 1.0 | 0.43 | ug/L |   |          | 08/18/20 18:16 | 1       |
| Trichloroethene          | 1.0    | U         | 1.0 | 0.36 | ug/L |   |          | 08/18/20 18:16 | 1       |
| Vinyl chloride           | 1.0    | U         | 1.0 | 0.50 | ug/L |   |          | 08/18/20 18:16 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 95        |           | 75 - 130 |          | 08/18/20 18:16 | 1       |
| 4-Bromofluorobenzene (Surr)  | 94        |           | 47 - 134 |          | 08/18/20 18:16 | 1       |
| Toluene-d8 (Surr)            | 97        |           | 69 - 122 |          | 08/18/20 18:16 | 1       |
| Dibromofluoromethane (Surr)  | 113       |           | 78 - 129 |          | 08/18/20 18:16 | 1       |

# Surrogate Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

| Lab Sample ID    | Client Sample ID   | Percent Surrogate Recovery (Acceptance Limits) |                 |                 |                  |
|------------------|--------------------|--|-----------------|-----------------|------------------|
|                  |                    | DCA<br>(75-130)                                | BFB<br>(47-134) | TOL<br>(69-122) | DBFM<br>(78-129) |
| 240-134685-1     | TRIP BLANK         | 98   | 95              | 100             | 117              |
| 240-134685-2     | MW-139S_080620     | 86   | 86              | 90              | 103              |
| 240-134685-3     | MW-141S_080620     | 96   | 96              | 98              | 114              |
| 240-134685-4     | MW-140S_080620     | 95   | 94              | 97              | 113              |
| LCS 240-447614/4 | Lab Control Sample | 94   | 97              | 98              | 118              |
| MB 240-447614/6  | Method Blank       | 115  | 115             | 121             | 135 X            |

#### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

## Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

| Lab Sample ID      | Client Sample ID       | DCA      |
|--------------------|------------------------|----------|
|                    |                        | (70-133) |
| 240-134654-A-2 MS  | Matrix Spike           | 88       |
| 240-134654-A-2 MSD | Matrix Spike Duplicate | 83       |
| 240-134685-2       | MW-139S_080620         | 85       |
| 240-134685-3       | MW-141S_080620         | 88       |
| 240-134685-4       | MW-140S_080620         | 96       |
| LCS 240-447208/4   | Lab Control Sample     | 87       |
| MB 240-447208/5    | Method Blank           | 88       |

#### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 240-447614/6**  
**Matrix: Water**  
**Analysis Batch: 447614**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

| Analyte                  | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene       | 1.0       | U            | 1.0 | 0.46 | ug/L |   |          | 08/18/20 12:39 | 1       |
| cis-1,2-Dichloroethene   | 1.0       | U            | 1.0 | 0.38 | ug/L |   |          | 08/18/20 12:39 | 1       |
| Tetrachloroethene        | 1.0       | U            | 1.0 | 0.33 | ug/L |   |          | 08/18/20 12:39 | 1       |
| trans-1,2-Dichloroethene | 1.0       | U            | 1.0 | 0.43 | ug/L |   |          | 08/18/20 12:39 | 1       |
| Trichloroethene          | 1.0       | U            | 1.0 | 0.36 | ug/L |   |          | 08/18/20 12:39 | 1       |
| Vinyl chloride           | 1.0       | U            | 1.0 | 0.50 | ug/L |   |          | 08/18/20 12:39 | 1       |

| Surrogate                    | MB %Recovery | MB Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|--------------|--------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 115          |              | 75 - 130 |          | 08/18/20 12:39 | 1       |
| 4-Bromofluorobenzene (Surr)  | 115          |              | 47 - 134 |          | 08/18/20 12:39 | 1       |
| Toluene-d8 (Surr)            | 121          |              | 69 - 122 |          | 08/18/20 12:39 | 1       |
| Dibromofluoromethane (Surr)  | 135          | X            | 78 - 129 |          | 08/18/20 12:39 | 1       |

**Lab Sample ID: LCS 240-447614/4**  
**Matrix: Water**  
**Analysis Batch: 447614**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

| Analyte                  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--------------------------|-------------|------------|---------------|------|---|------|--------------|
| 1,1-Dichloroethene       | 10.0        | 11.4       |               | ug/L |   | 114  | 73 - 129     |
| cis-1,2-Dichloroethene   | 10.0        | 11.5       |               | ug/L |   | 115  | 75 - 124     |
| Tetrachloroethene        | 10.0        | 10.9       |               | ug/L |   | 109  | 70 - 125     |
| trans-1,2-Dichloroethene | 10.0        | 11.6       |               | ug/L |   | 116  | 74 - 130     |
| Trichloroethene          | 10.0        | 10.5       |               | ug/L |   | 105  | 71 - 121     |
| Vinyl chloride           | 10.0        | 12.2       |               | ug/L |   | 122  | 61 - 134     |

| Surrogate                    | LCS %Recovery | LCS Qualifier | Limits   |
|------------------------------|---------------|---------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 94            |               | 75 - 130 |
| 4-Bromofluorobenzene (Surr)  | 97            |               | 47 - 134 |
| Toluene-d8 (Surr)            | 98            |               | 69 - 122 |
| Dibromofluoromethane (Surr)  | 118           |               | 78 - 129 |

## Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 240-447208/5**  
**Matrix: Water**  
**Analysis Batch: 447208**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

| Analyte     | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| 1,4-Dioxane | 2.0       | U            | 2.0 | 0.86 | ug/L |   |          | 08/14/20 12:26 | 1       |

| Surrogate                    | MB %Recovery | MB Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|--------------|--------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 88           |              | 70 - 133 |          | 08/14/20 12:26 | 1       |

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

## Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 240-447208/4**  
**Matrix: Water**  
**Analysis Batch: 447208**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

| Analyte                      | Spike Added | LCS Result    | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------------|-------------|---------------|---------------|------|---|------|--------------|
| 1,4-Dioxane                  | 10.0        | 10.6          |               | ug/L |   | 106  | 80 - 135     |
| <b>Surrogate</b>             |             |               |               |      |   |      |              |
|                              | %Recovery   | LCS Qualifier | LCS Limits    |      |   |      |              |
| 1,2-Dichloroethane-d4 (Surr) | 87          |               | 70 - 133      |      |   |      |              |

**Lab Sample ID: 240-134654-A-2 MS**  
**Matrix: Water**  
**Analysis Batch: 447208**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

| Analyte                      | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| 1,4-Dioxane                  | 2.0           | U                | 10.0        | 10.3      |              | ug/L |   | 103  | 46 - 170     |
| <b>Surrogate</b>             |               |                  |             |           |              |      |   |      |              |
|                              | %Recovery     | MS Qualifier     | MS Limits   |           |              |      |   |      |              |
| 1,2-Dichloroethane-d4 (Surr) | 88            |                  | 70 - 133    |           |              |      |   |      |              |

**Lab Sample ID: 240-134654-A-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 447208**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

| Analyte                      | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|------------------------------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| 1,4-Dioxane                  | 2.0           | U                | 10.0        | 10.1       |               | ug/L |   | 101  | 46 - 170     | 3   | 26        |
| <b>Surrogate</b>             |               |                  |             |            |               |      |   |      |              |     |           |
|                              | %Recovery     | MSD Qualifier    | MSD Limits  |            |               |      |   |      |              |     |           |
| 1,2-Dichloroethane-d4 (Surr) | 83            |                  | 70 - 133    |            |               |      |   |      |              |     |           |

# QC Association Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

## GC/MS VOA

### Analysis Batch: 447208

| Lab Sample ID      | Client Sample ID       | Prep Type | Matrix | Method    | Prep Batch |
|--------------------|------------------------|-----------|--------|-----------|------------|
| 240-134685-2       | MW-139S_080620         | Total/NA  | Water  | 8260B SIM |            |
| 240-134685-3       | MW-141S_080620         | Total/NA  | Water  | 8260B SIM |            |
| 240-134685-4       | MW-140S_080620         | Total/NA  | Water  | 8260B SIM |            |
| MB 240-447208/5    | Method Blank           | Total/NA  | Water  | 8260B SIM |            |
| LCS 240-447208/4   | Lab Control Sample     | Total/NA  | Water  | 8260B SIM |            |
| 240-134654-A-2 MS  | Matrix Spike           | Total/NA  | Water  | 8260B SIM |            |
| 240-134654-A-2 MSD | Matrix Spike Duplicate | Total/NA  | Water  | 8260B SIM |            |

### Analysis Batch: 447614

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|------------------|--------------------|-----------|--------|--------|------------|
| 240-134685-1     | TRIP BLANK         | Total/NA  | Water  | 8260B  |            |
| 240-134685-2     | MW-139S_080620     | Total/NA  | Water  | 8260B  |            |
| 240-134685-3     | MW-141S_080620     | Total/NA  | Water  | 8260B  |            |
| 240-134685-4     | MW-140S_080620     | Total/NA  | Water  | 8260B  |            |
| MB 240-447614/6  | Method Blank       | Total/NA  | Water  | 8260B  |            |
| LCS 240-447614/4 | Lab Control Sample | Total/NA  | Water  | 8260B  |            |



# Lab Chronicle

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-134685-1**

**Date Collected: 08/06/20 00:00**

**Matrix: Water**

**Date Received: 08/08/20 10:00**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 8260B        |     | 1               | 447614       | 08/18/20 17:09       | LEE     | TAL CAN |

**Client Sample ID: MW-139S\_080620**

**Lab Sample ID: 240-134685-2**

**Date Collected: 08/06/20 09:30**

**Matrix: Water**

**Date Received: 08/08/20 10:00**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 8260B        |     | 1               | 447614       | 08/18/20 17:31       | LEE     | TAL CAN |
| Total/NA  | Analysis   | 8260B SIM    |     | 1               | 447208       | 08/14/20 15:46       | SAM     | TAL CAN |

**Client Sample ID: MW-141S\_080620**

**Lab Sample ID: 240-134685-3**

**Date Collected: 08/06/20 10:24**

**Matrix: Water**

**Date Received: 08/08/20 10:00**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 8260B        |     | 1               | 447614       | 08/18/20 17:54       | LEE     | TAL CAN |
| Total/NA  | Analysis   | 8260B SIM    |     | 1               | 447208       | 08/14/20 16:12       | SAM     | TAL CAN |

**Client Sample ID: MW-140S\_080620**

**Lab Sample ID: 240-134685-4**

**Date Collected: 08/06/20 11:35**

**Matrix: Water**

**Date Received: 08/08/20 10:00**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 8260B        |     | 1               | 447614       | 08/18/20 18:16       | LEE     | TAL CAN |
| Total/NA  | Analysis   | 8260B SIM    |     | 1               | 447208       | 08/14/20 16:37       | SAM     | TAL CAN |

**Laboratory References:**

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

# Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Off-Site

Job ID: 240-134685-1

## Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority             | Program             | Identification Number | Expiration Date |
|-----------------------|---------------------|-----------------------|-----------------|
| California            | State               | 2927                  | 02-23-21        |
| Connecticut           | State               | PH-0590               | 12-31-21        |
| Florida               | NELAP               | E87225                | 06-30-21        |
| Georgia               | State               | 4062                  | 02-23-21        |
| Illinois              | NELAP               | 004498                | 07-31-20 *      |
| Iowa                  | State               | 421                   | 06-01-21        |
| Kansas                | NELAP               | E-10336               | 04-30-21        |
| Kentucky (UST)        | State               | 112225                | 02-23-21        |
| Kentucky (WW)         | State               | KY98016               | 12-31-20        |
| Minnesota             | NELAP               | OH00048               | 12-31-20        |
| Minnesota (Petrofund) | State               | 3506                  | 08-01-21        |
| New Jersey            | NELAP               | OH001                 | 06-30-21        |
| New York              | NELAP               | 10975                 | 03-31-21        |
| Ohio VAP              | State               | CL0024                | 06-05-21        |
| Oregon                | NELAP               | 4062                  | 02-24-21        |
| Pennsylvania          | NELAP               | 68-00340              | 08-31-20        |
| Texas                 | NELAP               | T104704517-18-10      | 08-31-20        |
| USDA                  | US Federal Programs | P330-18-00281         | 09-17-21        |
| Virginia              | NELAP               | 010101                | 09-14-20        |
| Washington            | State               | C971                  | 01-12-21        |
| West Virginia DEP     | State               | 210                   | 12-31-20        |

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Canton

# Chain of Custody Record

TestAmerica Laboratory location: Brighton --- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Regulatory program:  DW  NPDES  RCRA  Other

Client Project Manager: Kris Hinsky  
 Telephone: 248-994-2240  
 Email: kristoffer.hinsky@arcadis.com

Site Contact: Julia McClafferty  
 Telephone: 330-497-9396

Company Name: Arcadis  
 Address: 28550 Cabot Drive, Suite 500  
 City/State/Zip: Novi, MI, 48377  
 Phone: 248-994-2240

Project Name: Ford LTP Off-Site  
 Project Number: 30050315.402.04  
 PO # 30050315.402.04

Sampler Name: **CHRISTINA WEAVER**  
 Method of Shipment/Carrier:  
 Shipping/Tracking No:

| Sample Identification | Sample Date | Sample Time | Matrix |         |          |       | Containers & Preservatives |       |      |     | Filtered Sample (Y/N) | Analyses |      |    |      |               |                     |           | Sample Specific Notes / Special Instructions |                                   |
|-----------------------|-------------|-------------|--------|---------|----------|-------|----------------------------|-------|------|-----|-----------------------|----------|------|----|------|---------------|---------------------|-----------|--|-----------------------------------|
|                       |             |             | Air    | Aqueous | Sediment | Solid | Other:                     | H2SO4 | HNO3 | HCl |                       | NaOH     | Lead | Cu | NaOH | 1,1-DCE 8260B | Trans-1,2-DCE 8260B | PCE 8260B |  | TCE 8260B                         |
| TRIP BLANK            | 8/6/20      | ---         | 1      |         |          |       |                            | 1     |      |     |                       |          |      |    |      |               |                     |           |  | "1 TRIP BLANK"                    |
| MW-1395-080620        | 8/6/20      | 0930        | 6      |         |          |       |                            | 6     |      |     |                       |          |      |    |      |               |                     |           |  | "3 VOLS FOR BLOW 3 VOLS FOR BLOW" |
| MW-1415-080620        | 8/6/20      | 1024        | 6      |         |          |       |                            | 6     |      |     |                       |          |      |    |      |               |                     |           |  | " "                               |
| MW-1405-080620        | 8/6/20      | 1135        | 6      |         |          |       |                            | 6     |      |     |                       |          |      |    |      |               |                     |           |  | " "                               |



Possible Hazard Identification  
 Non-Hazard  Flammable  Irritant  Poison B  Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements & Comments:  
 Submit all results through Cadena at jtomalia@cadenaco.com, Cadena #E203631  
 Level IV Reporting requested.

| Relinquished by:        | Company: | Date/Time:     | Received by:      | Company:          | Date/Time:    |
|-------------------------|----------|----------------|-------------------|-------------------|---------------|
| <i>Christina Weaver</i> | ARCADIS  | 8/6/20 / 1400  | <i>MT</i>         | NOVI COLO STORAGE | 8/6/20 / 1400 |
| <i>Anton Brannick</i>   | ARCADIS  | 8/7/20 / 0915  | <i>MT</i>         | ETA               | 8/7/20 / 0914 |
| <i>MT</i>               | ETA      | 8/11/20 / 0910 | <i>Adam Grant</i> | ETA               | 8-8-20 / 1000 |

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : 134685

Canton Facility

Client Arcadis Site Name
Cooler Received on 8-8-20 Opened on 8-8-20
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Cooler unpacked by: Adam P...

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # 74 Foam Box Client Cooler Box Other
Packing material used: Bubble Wrap Foam Plastic Bag None Other
COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt
IR GUN# IR-10 (CF +0.7°C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. 3.4°C Corrected Cooler Temp. 4.3°C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
-Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC911298
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 04177016 Yes No
16. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving: VOAs Oil and Grease TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

Blank lines for Chain of Custody and Sample Discrepancies.

18. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):
VOA Sample Preservation - Date/Time VOAs Frozen: