



# ANALYTICAL REPORT

## PREPARED FOR

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Generated 5/30/2024 7:38:25 AM

## JOB DESCRIPTION

Ford LTP

## JOB NUMBER

240-204122-1

# Eurofins Cleveland

## Job Notes

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## Authorization



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# Definitions/Glossary

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description  |
|-----------|--|
| H         | Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| U         | Indicates the analyte was analyzed for but not detected.   |

## 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: Ford LTP

Job ID: 240-204122-1

**Job ID: 240-204122-1**

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## Job Narrative 240-204122-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

### Receipt

The samples were received on 5/9/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.4°C.

### GC/MS VOA

Method 8260D\_SIM: The following sample was analyzed outside of analytical holding time due to analyst oversight: MW-37\_050624 (240-204122-5).

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

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# Method Summary

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

| Method    | Method Description                  | Protocol | Laboratory |
|-----------|-------------------------------------|----------|------------|
| 8260D     | Volatile Organic Compounds by GC/MS | SW846    | EET CLE    |
| 8260D SIM | Volatile Organic Compounds (GC/MS)  | SW846    | EET CLE    |
| 5030C     | Purge and Trap                      | SW846    | EET CLE    |

**Protocol References:**

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

**Laboratory References:**

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396



# Sample Summary

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 240-204122-1  | TRIP BLANK_6     | Water  | 05/06/24 00:00 | 05/09/24 08:00 |
| 240-204122-2  | MW-65_050624     | Water  | 05/06/24 15:25 | 05/09/24 08:00 |
| 240-204122-3  | MW-66_050624     | Water  | 05/06/24 13:35 | 05/09/24 08:00 |
| 240-204122-4  | MW-38_050624     | Water  | 05/06/24 11:35 | 05/09/24 08:00 |
| 240-204122-5  | MW-37_050624     | Water  | 05/06/24 09:55 | 05/09/24 08:00 |

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# Detection Summary

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

## Client Sample ID: TRIP BLANK\_6

Lab Sample ID: 240-204122-1

No Detections.

## Client Sample ID: MW-65\_050624

Lab Sample ID: 240-204122-2

| Analyte                | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method | Prep Type |
|------------------------|--------|-----------|-----|------|------|---------|---|--------|-----------|
| cis-1,2-Dichloroethene | 2.5    |           | 1.0 | 0.46 | ug/L | 1       |   | 8260D  | Total/NA  |
| Vinyl chloride         | 7.4    |           | 1.0 | 0.45 | ug/L | 1       |   | 8260D  | Total/NA  |

## Client Sample ID: MW-66\_050624

Lab Sample ID: 240-204122-3

| Analyte        | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method    | Prep Type |
|----------------|--------|-----------|-----|------|------|---------|---|-----------|-----------|
| 1,4-Dioxane    | 0.93   | J         | 2.0 | 0.86 | ug/L | 1       |   | 8260D SIM | Total/NA  |
| Vinyl chloride | 1.1    |           | 1.0 | 0.45 | ug/L | 1       |   | 8260D     | Total/NA  |

## Client Sample ID: MW-38\_050624

Lab Sample ID: 240-204122-4

No Detections.

## Client Sample ID: MW-37\_050624

Lab Sample ID: 240-204122-5

No Detections.

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

**Client Sample ID: TRIP BLANK\_6**

**Lab Sample ID: 240-204122-1**

Date Collected: 05/06/24 00:00

Matrix: Water

Date Received: 05/09/24 08:00

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS**

| Analyte                  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene       | 1.0    | U         | 1.0 | 0.49 | ug/L |   |          | 05/15/24 10:36 | 1       |
| cis-1,2-Dichloroethene   | 1.0    | U         | 1.0 | 0.46 | ug/L |   |          | 05/15/24 10:36 | 1       |
| Tetrachloroethene        | 1.0    | U         | 1.0 | 0.44 | ug/L |   |          | 05/15/24 10:36 | 1       |
| trans-1,2-Dichloroethene | 1.0    | U         | 1.0 | 0.51 | ug/L |   |          | 05/15/24 10:36 | 1       |
| Trichloroethene          | 1.0    | U         | 1.0 | 0.44 | ug/L |   |          | 05/15/24 10:36 | 1       |
| Vinyl chloride           | 1.0    | U         | 1.0 | 0.45 | ug/L |   |          | 05/15/24 10:36 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 115       |           | 62 - 137 |          | 05/15/24 10:36 | 1       |
| 4-Bromofluorobenzene (Surr)  | 92        |           | 56 - 136 |          | 05/15/24 10:36 | 1       |
| Toluene-d8 (Surr)            | 102       |           | 78 - 122 |          | 05/15/24 10:36 | 1       |
| Dibromofluoromethane (Surr)  | 103       |           | 73 - 120 |          | 05/15/24 10:36 | 1       |

# Client Sample Results

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

**Client Sample ID: MW-65\_050624**

**Lab Sample ID: 240-204122-2**

Date Collected: 05/06/24 15:25

Matrix: Water

Date Received: 05/09/24 08:00

**Method: SW846 8260D 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 |   |                 | 05/11/24 04:14  | 1              |
| <b>Surrogate</b>             | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |      |      |   | <b>Prepared</b> | <b>Analyzed</b> | <b>Dil Fac</b> |
| 1,2-Dichloroethane-d4 (Surr) | 104              |                  | 68 - 127      |      |      |   |                 | 05/11/24 04:14  | 1              |

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS**

| Analyte                       | Result           | Qualifier        | RL            | MDL  | Unit | D | Prepared        | Analyzed        | Dil Fac        |
|-------------------------------|------------------|------------------|---------------|------|------|---|-----------------|-----------------|----------------|
| 1,1-Dichloroethene            | 1.0              | U                | 1.0           | 0.49 | ug/L |   |                 | 05/15/24 13:31  | 1              |
| <b>cis-1,2-Dichloroethene</b> | <b>2.5</b>       |                  | 1.0           | 0.46 | ug/L |   |                 | 05/15/24 13:31  | 1              |
| Tetrachloroethene             | 1.0              | U                | 1.0           | 0.44 | ug/L |   |                 | 05/15/24 13:31  | 1              |
| trans-1,2-Dichloroethene      | 1.0              | U                | 1.0           | 0.51 | ug/L |   |                 | 05/15/24 13:31  | 1              |
| Trichloroethene               | 1.0              | U                | 1.0           | 0.44 | ug/L |   |                 | 05/15/24 13:31  | 1              |
| <b>Vinyl chloride</b>         | <b>7.4</b>       |                  | 1.0           | 0.45 | ug/L |   |                 | 05/15/24 13:31  | 1              |
| <b>Surrogate</b>              | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |      |      |   | <b>Prepared</b> | <b>Analyzed</b> | <b>Dil Fac</b> |
| 1,2-Dichloroethane-d4 (Surr)  | 118              |                  | 62 - 137      |      |      |   |                 | 05/15/24 13:31  | 1              |
| 4-Bromofluorobenzene (Surr)   | 89               |                  | 56 - 136      |      |      |   |                 | 05/15/24 13:31  | 1              |
| Toluene-d8 (Surr)             | 100              |                  | 78 - 122      |      |      |   |                 | 05/15/24 13:31  | 1              |
| Dibromofluoromethane (Surr)   | 106              |                  | 73 - 120      |      |      |   |                 | 05/15/24 13:31  | 1              |

# Client Sample Results

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

**Client Sample ID: MW-66\_050624**

**Lab Sample ID: 240-204122-3**

Date Collected: 05/06/24 13:35

Matrix: Water

Date Received: 05/09/24 08:00

**Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)**

| Analyte                      | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|------|------|---|----------|----------------|---------|
| 1,4-Dioxane                  | 0.93      | J         | 2.0      | 0.86 | ug/L |   |          | 05/11/24 04:38 | 1       |
| Surrogate                    | %Recovery | Qualifier | Limits   |      |      |   | Prepared | Analyzed       | Dil Fac |
| 1,2-Dichloroethane-d4 (Surr) | 108       |           | 68 - 127 |      |      |   |          | 05/11/24 04:38 | 1       |

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS**

| Analyte                      | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene           | 1.0       | U         | 1.0      | 0.49 | ug/L |   |          | 05/15/24 13:56 | 1       |
| cis-1,2-Dichloroethene       | 1.0       | U         | 1.0      | 0.46 | ug/L |   |          | 05/15/24 13:56 | 1       |
| Tetrachloroethene            | 1.0       | U         | 1.0      | 0.44 | ug/L |   |          | 05/15/24 13:56 | 1       |
| trans-1,2-Dichloroethene     | 1.0       | U         | 1.0      | 0.51 | ug/L |   |          | 05/15/24 13:56 | 1       |
| Trichloroethene              | 1.0       | U         | 1.0      | 0.44 | ug/L |   |          | 05/15/24 13:56 | 1       |
| Vinyl chloride               | 1.1       |           | 1.0      | 0.45 | ug/L |   |          | 05/15/24 13:56 | 1       |
| Surrogate                    | %Recovery | Qualifier | Limits   |      |      |   | Prepared | Analyzed       | Dil Fac |
| 1,2-Dichloroethane-d4 (Surr) | 117       |           | 62 - 137 |      |      |   |          | 05/15/24 13:56 | 1       |
| 4-Bromofluorobenzene (Surr)  | 89        |           | 56 - 136 |      |      |   |          | 05/15/24 13:56 | 1       |
| Toluene-d8 (Surr)            | 100       |           | 78 - 122 |      |      |   |          | 05/15/24 13:56 | 1       |
| Dibromofluoromethane (Surr)  | 103       |           | 73 - 120 |      |      |   |          | 05/15/24 13:56 | 1       |

# Client Sample Results

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

**Client Sample ID: MW-38\_050624**

**Lab Sample ID: 240-204122-4**

Date Collected: 05/06/24 11:35

Matrix: Water

Date Received: 05/09/24 08:00

**Method: SW846 8260D 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 |   |                 | 05/11/24 05:01  | 1              |
| <b>Surrogate</b>             | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |      |      |   | <b>Prepared</b> | <b>Analyzed</b> | <b>Dil Fac</b> |
| 1,2-Dichloroethane-d4 (Surr) | 102              |                  | 68 - 127      |      |      |   |                 | 05/11/24 05:01  | 1              |

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS**

| Analyte                      | Result           | Qualifier        | RL            | MDL  | Unit | D | Prepared        | Analyzed        | Dil Fac        |
|------------------------------|------------------|------------------|---------------|------|------|---|-----------------|-----------------|----------------|
| 1,1-Dichloroethene           | 1.0              | U                | 1.0           | 0.49 | ug/L |   |                 | 05/15/24 14:21  | 1              |
| cis-1,2-Dichloroethene       | 1.0              | U                | 1.0           | 0.46 | ug/L |   |                 | 05/15/24 14:21  | 1              |
| Tetrachloroethene            | 1.0              | U                | 1.0           | 0.44 | ug/L |   |                 | 05/15/24 14:21  | 1              |
| trans-1,2-Dichloroethene     | 1.0              | U                | 1.0           | 0.51 | ug/L |   |                 | 05/15/24 14:21  | 1              |
| Trichloroethene              | 1.0              | U                | 1.0           | 0.44 | ug/L |   |                 | 05/15/24 14:21  | 1              |
| Vinyl chloride               | 1.0              | U                | 1.0           | 0.45 | ug/L |   |                 | 05/15/24 14:21  | 1              |
| <b>Surrogate</b>             | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |      |      |   | <b>Prepared</b> | <b>Analyzed</b> | <b>Dil Fac</b> |
| 1,2-Dichloroethane-d4 (Surr) | 116              |                  | 62 - 137      |      |      |   |                 | 05/15/24 14:21  | 1              |
| 4-Bromofluorobenzene (Surr)  | 89               |                  | 56 - 136      |      |      |   |                 | 05/15/24 14:21  | 1              |
| Toluene-d8 (Surr)            | 98               |                  | 78 - 122      |      |      |   |                 | 05/15/24 14:21  | 1              |
| Dibromofluoromethane (Surr)  | 104              |                  | 73 - 120      |      |      |   |                 | 05/15/24 14:21  | 1              |

# Client Sample Results

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

**Client Sample ID: MW-37\_050624**

**Lab Sample ID: 240-204122-5**

Date Collected: 05/06/24 09:55

Matrix: Water

Date Received: 05/09/24 08:00

**Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)**

| Analyte                      | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|------|------|---|----------|----------------|---------|
| 1,4-Dioxane                  | 2.0       | U H       | 2.0      | 0.86 | ug/L |   |          | 05/29/24 11:44 | 1       |
| Surrogate                    | %Recovery | Qualifier | Limits   |      |      |   | Prepared | Analyzed       | Dil Fac |
| 1,2-Dichloroethane-d4 (Surr) | 91        |           | 68 - 127 |      |      |   |          | 05/29/24 11:44 | 1       |

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS**

| Analyte                      | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene           | 1.0       | U         | 1.0      | 0.49 | ug/L |   |          | 05/15/24 14:46 | 1       |
| cis-1,2-Dichloroethene       | 1.0       | U         | 1.0      | 0.46 | ug/L |   |          | 05/15/24 14:46 | 1       |
| Tetrachloroethene            | 1.0       | U         | 1.0      | 0.44 | ug/L |   |          | 05/15/24 14:46 | 1       |
| trans-1,2-Dichloroethene     | 1.0       | U         | 1.0      | 0.51 | ug/L |   |          | 05/15/24 14:46 | 1       |
| Trichloroethene              | 1.0       | U         | 1.0      | 0.44 | ug/L |   |          | 05/15/24 14:46 | 1       |
| Vinyl chloride               | 1.0       | U         | 1.0      | 0.45 | ug/L |   |          | 05/15/24 14:46 | 1       |
| Surrogate                    | %Recovery | Qualifier | Limits   |      |      |   | Prepared | Analyzed       | Dil Fac |
| 1,2-Dichloroethane-d4 (Surr) | 120       |           | 62 - 137 |      |      |   |          | 05/15/24 14:46 | 1       |
| 4-Bromofluorobenzene (Surr)  | 87        |           | 56 - 136 |      |      |   |          | 05/15/24 14:46 | 1       |
| Toluene-d8 (Surr)            | 100       |           | 78 - 122 |      |      |   |          | 05/15/24 14:46 | 1       |
| Dibromofluoromethane (Surr)  | 104       |           | 73 - 120 |      |      |   |          | 05/15/24 14:46 | 1       |

# Surrogate Summary

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

## Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID       | Percent Surrogate Recovery (Acceptance Limits) |                 |                 |                  |
|--------------------|------------------------|--|-----------------|-----------------|------------------|
|                    |                        | DCA<br>(62-137)                                | BFB<br>(56-136) | TOL<br>(78-122) | DBFM<br>(73-120) |
| 240-204028-C-3 MS  | Matrix Spike           | 111  | 108             | 105             | 104              |
| 240-204028-C-3 MSD | Matrix Spike Duplicate | 108  | 107             | 103             | 102              |
| 240-204122-1       | TRIP BLANK_6           | 115  | 92              | 102             | 103              |
| 240-204122-2       | MW-65_050624           | 118  | 89              | 100             | 106              |
| 240-204122-3       | MW-66_050624           | 117  | 89              | 100             | 103              |
| 240-204122-4       | MW-38_050624           | 116  | 89              | 98              | 104              |
| 240-204122-5       | MW-37_050624           | 120  | 87              | 100             | 104              |
| LCS 240-613062/4   | Lab Control Sample     | 109  | 107             | 102             | 102              |
| MB 240-613062/6    | Method Blank           | 116  | 90              | 100             | 103              |

**Surrogate Legend**

DCA = 1,2-Dichloroethane-d4 (Surr)  
BFB = 4-Bromofluorobenzene (Surr)  
TOL = Toluene-d8 (Surr)  
DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID       | Percent Surrogate Recovery (Acceptance Limits) |
|--------------------|------------------------|--|
|                    |                        | DCA<br>(68-127)                                |
| 240-204121-A-2 MS  | Matrix Spike           | 104  |
| 240-204121-A-2 MSD | Matrix Spike Duplicate | 104  |
| 240-204122-2       | MW-65_050624           | 104  |
| 240-204122-3       | MW-66_050624           | 108  |
| 240-204122-4       | MW-38_050624           | 102  |
| 240-204122-5       | MW-37_050624           | 91   |
| 240-205008-A-2 MS  | Matrix Spike           | 89   |
| 240-205008-A-2 MSD | Matrix Spike Duplicate | 93   |
| LCS 240-612658/3   | Lab Control Sample     | 105  |
| LCS 240-614704/4   | Lab Control Sample     | 87   |
| MB 240-612658/5    | Method Blank           | 105  |
| MB 240-614704/6    | Method Blank           | 85   |

**Surrogate Legend**

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

# QC Sample Results

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

## Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-613062/6

Matrix: Water

Analysis Batch: 613062

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                  | MB     | MB        | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
|                          | Result | Qualifier |     |      |      |   |          |                |         |
| 1,1-Dichloroethene       | 1.0    | U         | 1.0 | 0.49 | ug/L |   |          | 05/15/24 10:10 | 1       |
| cis-1,2-Dichloroethene   | 1.0    | U         | 1.0 | 0.46 | ug/L |   |          | 05/15/24 10:10 | 1       |
| Tetrachloroethene        | 1.0    | U         | 1.0 | 0.44 | ug/L |   |          | 05/15/24 10:10 | 1       |
| trans-1,2-Dichloroethene | 1.0    | U         | 1.0 | 0.51 | ug/L |   |          | 05/15/24 10:10 | 1       |
| Trichloroethene          | 1.0    | U         | 1.0 | 0.44 | ug/L |   |          | 05/15/24 10:10 | 1       |
| Vinyl chloride           | 1.0    | U         | 1.0 | 0.45 | ug/L |   |          | 05/15/24 10:10 | 1       |

| Surrogate                    | MB        | MB        | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
|                              | %Recovery | Qualifier |          |          |                |         |
| 1,2-Dichloroethane-d4 (Surr) | 116       |           | 62 - 137 |          | 05/15/24 10:10 | 1       |
| 4-Bromofluorobenzene (Surr)  | 90        |           | 56 - 136 |          | 05/15/24 10:10 | 1       |
| Toluene-d8 (Surr)            | 100       |           | 78 - 122 |          | 05/15/24 10:10 | 1       |
| Dibromofluoromethane (Surr)  | 103       |           | 73 - 120 |          | 05/15/24 10:10 | 1       |

Lab Sample ID: LCS 240-613062/4

Matrix: Water

Analysis Batch: 613062

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                  | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec Limits |
|--------------------------|-------------|--------|-----------|------|---|------|-------------|
|                          |             | Result | Qualifier |      |   |      |             |
| 1,1-Dichloroethene       | 25.0        | 26.7   |           | ug/L |   | 107  | 63 - 134    |
| cis-1,2-Dichloroethene   | 25.0        | 25.7   |           | ug/L |   | 103  | 77 - 123    |
| Tetrachloroethene        | 25.0        | 25.7   |           | ug/L |   | 103  | 76 - 123    |
| trans-1,2-Dichloroethene | 25.0        | 26.3   |           | ug/L |   | 105  | 75 - 124    |
| Trichloroethene          | 25.0        | 25.3   |           | ug/L |   | 101  | 70 - 122    |
| Vinyl chloride           | 12.5        | 11.3   |           | ug/L |   | 90   | 60 - 144    |

| Surrogate                    | LCS       | LCS       | Limits   |
|------------------------------|-----------|-----------|----------|
|                              | %Recovery | Qualifier |          |
| 1,2-Dichloroethane-d4 (Surr) | 109       |           | 62 - 137 |
| 4-Bromofluorobenzene (Surr)  | 107       |           | 56 - 136 |
| Toluene-d8 (Surr)            | 102       |           | 78 - 122 |
| Dibromofluoromethane (Surr)  | 102       |           | 73 - 120 |

Lab Sample ID: 240-204028-C-3 MS

Matrix: Water

Analysis Batch: 613062

Client Sample ID: Matrix Spike

Prep Type: Total/NA

| Analyte            | Sample | Sample    | Spike Added | MS     | MS        | Unit | D | %Rec | %Rec Limits |
|--------------------|--------|-----------|-------------|--------|-----------|------|---|------|-------------|
|                    | Result | Qualifier |             | Result | Qualifier |      |   |      |             |
| 1,1-Dichloroethene | 0.70   | J         | 25.0        | 25.2   |           | ug/L |   | 98   | 56 - 135    |

| Surrogate                    | MS        | MS        | Limits   |
|------------------------------|-----------|-----------|----------|
|                              | %Recovery | Qualifier |          |
| 1,2-Dichloroethane-d4 (Surr) | 111       |           | 62 - 137 |
| 4-Bromofluorobenzene (Surr)  | 108       |           | 56 - 136 |
| Toluene-d8 (Surr)            | 105       |           | 78 - 122 |
| Dibromofluoromethane (Surr)  | 104       |           | 73 - 120 |

# QC Sample Results

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-204028-C-3 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 613062

| Analyte                      | Sample Result    | Sample Qualifier | Spike Added   | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|------------------------------|------------------|------------------|---------------|------------|---------------|------|---|------|-------------|-----|-----------|
| 1,1-Dichloroethene           | 0.70             | J                | 25.0          | 26.1       |               | ug/L |   | 102  | 56 - 135    | 4   | 26        |
| <b>Surrogate</b>             | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |            |               |      |   |      |             |     |           |
| 1,2-Dichloroethane-d4 (Surr) | 108              |                  | 62 - 137      |            |               |      |   |      |             |     |           |
| 4-Bromofluorobenzene (Surr)  | 107              |                  | 56 - 136      |            |               |      |   |      |             |     |           |
| Toluene-d8 (Surr)            | 103              |                  | 78 - 122      |            |               |      |   |      |             |     |           |
| Dibromofluoromethane (Surr)  | 102              |                  | 73 - 120      |            |               |      |   |      |             |     |           |

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

Lab Sample ID: MB 240-612658/5

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 612658

| 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 |   |                 | 05/10/24 21:35  | 1              |
| <b>Surrogate</b>             | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |      |      |   | <b>Prepared</b> | <b>Analyzed</b> | <b>Dil Fac</b> |
| 1,2-Dichloroethane-d4 (Surr) | 105              |                  | 68 - 127      |      |      |   |                 | 05/10/24 21:35  | 1              |

Lab Sample ID: LCS 240-612658/3

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 612658

| Analyte                      | Spike Added      | LCS Result       | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|------------------------------|------------------|------------------|---------------|------|---|------|-------------|
| 1,4-Dioxane                  | 10.0             | 9.36             |               | ug/L |   | 94   | 75 - 121    |
| <b>Surrogate</b>             | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |      |   |      |             |
| 1,2-Dichloroethane-d4 (Surr) | 105              |                  | 68 - 127      |      |   |      |             |

Lab Sample ID: 240-204121-A-2 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 612658

| Analyte                      | Sample Result    | Sample Qualifier | Spike Added   | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|------------------------------|------------------|------------------|---------------|-----------|--------------|------|---|------|-------------|
| 1,4-Dioxane                  | 2.0              | U                | 10.0          | 9.63      |              | ug/L |   | 96   | 20 - 180    |
| <b>Surrogate</b>             | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |           |              |      |   |      |             |
| 1,2-Dichloroethane-d4 (Surr) | 104              |                  | 68 - 127      |           |              |      |   |      |             |

Lab Sample ID: 240-204121-A-2 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 612658

| 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        | 10.0       |               | ug/L |   | 100  | 20 - 180    | 4   | 20        |

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# QC Sample Results

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

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

**Lab Sample ID: 240-204121-A-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 612658**

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

| Surrogate                    | MSD<br>%Recovery | MSD<br>Qualifier | Limits   |
|------------------------------|------------------|------------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 104              |                  | 68 - 127 |

**Lab Sample ID: MB 240-614704/6**  
**Matrix: Water**  
**Analysis Batch: 614704**

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

| Analyte     | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| 1,4-Dioxane | 2.0          | U               | 2.0 | 0.86 | ug/L |   |          | 05/29/24 11:20 | 1       |

| Surrogate                    | MB<br>%Recovery | MB<br>Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------------|-----------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 85              |                 | 68 - 127 |          | 05/29/24 11:20 | 1       |

**Lab Sample ID: LCS 240-614704/4**  
**Matrix: Water**  
**Analysis Batch: 614704**

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

| Analyte     | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec<br>Limits |
|-------------|----------------|---------------|------------------|------|---|------|----------------|
| 1,4-Dioxane | 10.0           | 9.49          |                  | ug/L |   | 95   | 75 - 121       |

| Surrogate                    | LCS<br>%Recovery | LCS<br>Qualifier | Limits   |
|------------------------------|------------------|------------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 87               |                  | 68 - 127 |

**Lab Sample ID: 240-205008-A-2 MS**  
**Matrix: Water**  
**Analysis Batch: 614704**

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

| Analyte     | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MS<br>Result | MS<br>Qualifier | Unit | D | %Rec | %Rec<br>Limits |
|-------------|------------------|---------------------|----------------|--------------|-----------------|------|---|------|----------------|
| 1,4-Dioxane | 2.0              | U                   | 10.0           | 9.81         |                 | ug/L |   | 98   | 20 - 180       |

| Surrogate                    | MS<br>%Recovery | MS<br>Qualifier | Limits   |
|------------------------------|-----------------|-----------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 89              |                 | 68 - 127 |

**Lab Sample ID: 240-205008-A-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 614704**

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

| Analyte     | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MSD<br>Result | MSD<br>Qualifier | Unit | D | %Rec | %Rec<br>Limits | RPD | RPD<br>Limit |
|-------------|------------------|---------------------|----------------|---------------|------------------|------|---|------|----------------|-----|--------------|
| 1,4-Dioxane | 2.0              | U                   | 10.0           | 10.1          |                  | ug/L |   | 101  | 20 - 180       | 3   | 20           |

| Surrogate                    | MSD<br>%Recovery | MSD<br>Qualifier | Limits   |
|------------------------------|------------------|------------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 93               |                  | 68 - 127 |

# QC Association Summary

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

## GC/MS VOA

### Analysis Batch: 612658

| Lab Sample ID      | Client Sample ID       | Prep Type | Matrix | Method    | Prep Batch |
|--------------------|------------------------|-----------|--------|-----------|------------|
| 240-204122-2       | MW-65_050624           | Total/NA  | Water  | 8260D SIM |            |
| 240-204122-3       | MW-66_050624           | Total/NA  | Water  | 8260D SIM |            |
| 240-204122-4       | MW-38_050624           | Total/NA  | Water  | 8260D SIM |            |
| MB 240-612658/5    | Method Blank           | Total/NA  | Water  | 8260D SIM |            |
| LCS 240-612658/3   | Lab Control Sample     | Total/NA  | Water  | 8260D SIM |            |
| 240-204121-A-2 MS  | Matrix Spike           | Total/NA  | Water  | 8260D SIM |            |
| 240-204121-A-2 MSD | Matrix Spike Duplicate | Total/NA  | Water  | 8260D SIM |            |

### Analysis Batch: 613062

| Lab Sample ID      | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|--------------------|------------------------|-----------|--------|--------|------------|
| 240-204122-1       | TRIP BLANK_6           | Total/NA  | Water  | 8260D  |            |
| 240-204122-2       | MW-65_050624           | Total/NA  | Water  | 8260D  |            |
| 240-204122-3       | MW-66_050624           | Total/NA  | Water  | 8260D  |            |
| 240-204122-4       | MW-38_050624           | Total/NA  | Water  | 8260D  |            |
| 240-204122-5       | MW-37_050624           | Total/NA  | Water  | 8260D  |            |
| MB 240-613062/6    | Method Blank           | Total/NA  | Water  | 8260D  |            |
| LCS 240-613062/4   | Lab Control Sample     | Total/NA  | Water  | 8260D  |            |
| 240-204028-C-3 MS  | Matrix Spike           | Total/NA  | Water  | 8260D  |            |
| 240-204028-C-3 MSD | Matrix Spike Duplicate | Total/NA  | Water  | 8260D  |            |

### Analysis Batch: 614704

| Lab Sample ID      | Client Sample ID       | Prep Type | Matrix | Method    | Prep Batch |
|--------------------|------------------------|-----------|--------|-----------|------------|
| 240-204122-5       | MW-37_050624           | Total/NA  | Water  | 8260D SIM |            |
| MB 240-614704/6    | Method Blank           | Total/NA  | Water  | 8260D SIM |            |
| LCS 240-614704/4   | Lab Control Sample     | Total/NA  | Water  | 8260D SIM |            |
| 240-205008-A-2 MS  | Matrix Spike           | Total/NA  | Water  | 8260D SIM |            |
| 240-205008-A-2 MSD | Matrix Spike Duplicate | Total/NA  | Water  | 8260D SIM |            |

# Lab Chronicle

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

**Client Sample ID: TRIP BLANK\_6**

**Lab Sample ID: 240-204122-1**

Date Collected: 05/06/24 00:00

Matrix: Water

Date Received: 05/09/24 08:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab     | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|---------|----------------------|
| Total/NA  | Analysis   | 8260D        |     | 1               | 613062       | CDG     | EET CLE | 05/15/24 10:36       |

**Client Sample ID: MW-65\_050624**

**Lab Sample ID: 240-204122-2**

Date Collected: 05/06/24 15:25

Matrix: Water

Date Received: 05/09/24 08:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab     | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|---------|----------------------|
| Total/NA  | Analysis   | 8260D        |     | 1               | 613062       | CDG     | EET CLE | 05/15/24 13:31       |
| Total/NA  | Analysis   | 8260D SIM    |     | 1               | 612658       | MDH     | EET CLE | 05/11/24 04:14       |

**Client Sample ID: MW-66\_050624**

**Lab Sample ID: 240-204122-3**

Date Collected: 05/06/24 13:35

Matrix: Water

Date Received: 05/09/24 08:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab     | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|---------|----------------------|
| Total/NA  | Analysis   | 8260D        |     | 1               | 613062       | CDG     | EET CLE | 05/15/24 13:56       |
| Total/NA  | Analysis   | 8260D SIM    |     | 1               | 612658       | MDH     | EET CLE | 05/11/24 04:38       |

**Client Sample ID: MW-38\_050624**

**Lab Sample ID: 240-204122-4**

Date Collected: 05/06/24 11:35

Matrix: Water

Date Received: 05/09/24 08:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab     | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|---------|----------------------|
| Total/NA  | Analysis   | 8260D        |     | 1               | 613062       | CDG     | EET CLE | 05/15/24 14:21       |
| Total/NA  | Analysis   | 8260D SIM    |     | 1               | 612658       | MDH     | EET CLE | 05/11/24 05:01       |

**Client Sample ID: MW-37\_050624**

**Lab Sample ID: 240-204122-5**

Date Collected: 05/06/24 09:55

Matrix: Water

Date Received: 05/09/24 08:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab     | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|---------|----------------------|
| Total/NA  | Analysis   | 8260D        |     | 1               | 613062       | CDG     | EET CLE | 05/15/24 14:46       |
| Total/NA  | Analysis   | 8260D SIM    |     | 1               | 614704       | MDH     | EET CLE | 05/29/24 11:44       |

**Laboratory References:**

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

# Accreditation/Certification Summary

Client: Arcadis U.S., Inc.  
Project/Site: Ford LTP

Job ID: 240-204122-1

## Laboratory: Eurofins Cleveland


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                  | 02-28-25        |
| Georgia           | State               | 4062                  | 02-27-25        |
| Illinois          | NELAP               | 200004                | 07-31-24        |
| Iowa              | State               | 421                   | 06-01-25        |
| Kentucky (UST)    | State               | 112225                | 02-27-25        |
| Kentucky (WW)     | State               | KY98016               | 12-30-24        |
| Minnesota         | NELAP               | 039-999-348           | 12-31-24        |
| New Jersey        | NELAP               | OH001                 | 06-30-24        |
| New York          | NELAP               | 10975                 | 04-02-25        |
| Ohio VAP          | State               | ORELAP 4062           | 02-27-25        |
| Oregon            | NELAP               | 4062                  | 02-27-25        |
| Pennsylvania      | NELAP               | 68-00340              | 08-31-24        |
| Texas             | NELAP               | T104704517-22-19      | 08-31-24        |
| USDA              | US Federal Programs | P330-18-00281         | 01-05-27        |
| Virginia          | NELAP               | 460175                | 09-14-24        |
| West Virginia DEP | State               | 210                   | 12-31-24        |

3-4134

### Chain of Custody Record

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

| Client Contact  |                  | Regulatory program:   |   | TestAmerica Laboratories, Inc.  |                         |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
|---|------------------|---|---|---|-------------------------|-------|--------|----------------------------|------|---|------|-----------|-----------------------|----------------------|------------------|---|---|--------|---------------|-------------------|--|
| Company Name: Arcadis   |                  | <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other |   | COC No:   |                         |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
| Address: 28550 Cabot Drive, Suite 500   |                  | Client Project Manager: Kris Hinskey  |   | Site Contact: Christina Weaver  |                         |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
| City/State/Zip: Novi, MI, 48377   |                  | Telephone: 248-994-2240   |   | Telephone: 248-994-2240   |                         |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
| Phone: 248-994-2240   |                  | Email: kristoffer.hinskey@arcadis.com   |   | Telephone: 330-497-9396   |                         |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
| Project Name: Ford LTP  |                  | Sampler Name: <b>Kent Kasper</b>  |   | Analysis Turnaround Time  |                         |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
| Project Number: 30206169.0401.03  |                  | Method of Shipment/Carrier:   |   | TAT if different from below<br><input type="checkbox"/> 3 weeks<br><input checked="" type="checkbox"/> 10 day <input type="checkbox"/> 2 weeks<br><input type="checkbox"/> 1 week <input type="checkbox"/> 2 days<br><input type="checkbox"/> 1 day |                         |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
| PO # US3410018772   |                  | Shipping/Tracking No:   |   | Analyses  |                         |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
| Sample Identification   | Sample Date      | Sample Time   | Matrix                                  |   |                         |       |        | Containers & Preservatives |      |   |      |           | Filtered Sample (Y/N) | Composite=C / Grab=G | For lab use only | Sample Specific Notes / Special Instructions: |   |        |               |                   |  |
|   |                  |   | Air                                     | Aqueous   | Sediment                | Solid | Other: | H2SO4                      | HNO3 | HCl   | NaOH | ZnAc/NaOH |                       |                      |                  |   | Unpres  | Other: | 1,1-DCE 8260D | Cis-1,2-DCE 8260D | Trans-1,2-DCE 8260D                      |
| ✓ TRIP BLANK_ <b>10</b>   | ---              | ---   | 1                                       |   |                         |       |        | 1                          |      |   |      |           | NG                    | X                    | X                | X   | X   | X      | X             | X                 | 1 Trip Blank                             |
| ✓ MW-105-050624   | 5/6/24           | 1525  | 6                                       |   |                         |       |        | 6                          |      |   |      |           | NG                    | X                    | X                | X   | X   | X      | X             | X                 | 3 VOAs for 8260D<br>3 VOAs for 8260D SIM |
| ✓ MW-106-050624   | 5/6/24           | 1335  | 6                                       |   |                         |       |        | 6                          |      |   |      |           | NG                    | X                    | X                | X   | X   | X      | X             | X                 |  |
| ✓ MW-38-050624  | 5/6/24           | 1135  | 6                                       |   |                         |       |        | 6                          |      |   |      |           | NG                    | X                    | X                | X   | X   | X      | X             | X                 |  |
| ✓ MW-37-050624  | 5/6/24           | 0955  | 6                                       |   |                         |       |        | 6                          |      |   |      |           | NG                    | X                    | X                | X   | X   | X      | X             | X                 |  |
|  <p>240-204122 Chain of Custody</p>  |                  |   |   |   |                         |       |        |                            |      |   |      |           |                       |                      |                  |   | <p style="font-size: 2em; color: green;">MICHIGAN<br/>190</p> |        |               |                   |  |
| Possible Hazard Identification  |                  |   |   |   |                         |       |        |                            |      | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)  |      |           |                       |                      |                  |   |   |        |               |                   |  |
| <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown |                  |   |   |   |                         |       |        |                            |      | <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months |      |           |                       |                      |                  |   |   |        |               |                   |  |
| Special Instructions/QC Requirements & Comments:  |                  |   |   |   |                         |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
| Submit all results through Cadena at jtomalia@cadenaos.com. Cadena #E203728<br>Level IV Reporting requested.  |                  |   |   |   |                         |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
| Relinquished by:  | Company: Arcadis | Date/Time: 5/6/24 1638  | Received by: Navi Cold Storage          | Company: Arcadis  | Date/Time: 5/6/24 1638  |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
| Relinquished by:  | Company: Arcadis | Date/Time: 5/8/24 1235  | Received by:                            | Company: BETA   | Date/Time: 5/8/24 12:40 |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |
| Relinquished by:  | Company: BETA    | Date/Time: 5/8/24 12:45   | Received in laboratory by: MALISSA LOAR | Company: EUR  | Date/Time: 5-9-24 8am   |       |        |                            |      |   |      |           |                       |                      |                  |   |   |        |               |                   |  |

Eurofins - Cleveland Sample Receipt Form/Narrative Login # \_\_\_\_\_  
 Barberton Facility Cooler purged by: MALISSA L'HEAR

Client ARRADIS Site Name \_\_\_\_\_  
 Cooler Received on 5-9-24 Opened on 5-9-24

FedEx: 1<sup>st</sup> Grd Exp UPS FA3 Waypoint Client Drop Off Eurofins Courier Other \_\_\_\_\_  
 Receipt After-hours Drop-off Date/Time \_\_\_\_\_ Storage Location \_\_\_\_\_

Eurofins Cooler # 2 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  See Multiple Cooler Form  
 IR GUN # 18 (CF A) °C Observed Cooler Temp 3.4 °C Corrected Cooler Temp. 3.4 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity Yes No 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 No  
 Were tamper/custody seals intact and uncompromised? Yes No NA  
 3 Shippers' packing slip attached to the cooler(s)? Yes No NA  
 4 Did custody papers accompany the sample(s)? Yes No No  
 5 Were the custody papers relinquished & signed in the appropriate place? Yes No No  
 6 Was/were the person(s) who collected the samples clearly identified on the COC? Yes No No  
 7 Did all bottles arrive in good condition (Unbroken)? Yes No No  
 8 Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No No  
 9 For each sample, does the COC specify preservatives (YAN), # of containers (YAN), and sample type of grab/cont (YAN)?  
 10 Were correct bottle(s) used for the test(s) indicated? Yes No No  
 11 Sufficient quantity received to perform indicated analyses? Yes No No  
 12. Are these work share samples and all listed on the COC? Yes No No  
 If yes, Questions 13-17 have been checked at the originating laboratory

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

13 Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC439975  
 14. Were VOAs on the COC? Yes No No  
 15 Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this  
 16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # \_\_\_\_\_  
 17 Was a LL Hg or Me Hg trip blank present? Yes No No

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other \_\_\_\_\_  
 Concerning \_\_\_\_\_

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES  additional next page  Samples processed by: \_\_\_\_\_

19. 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)

20. 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 \_\_\_\_\_

## Login Sample Receipt Checklist

Client: Arcadis U.S., Inc.

Job Number: 240-204122-1

**Login Number: 204122**

**List Number: 1**

**Creator: Loar, Malissa**

**List Source: Eurofins Cleveland**

| Question   | Answer | Comment |
|--|--------|---------|
| Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.      |        |         |
| The cooler's custody seal, if present, is intact.  |        |         |
| Sample custody seals, if present, are intact.  |        |         |
| The cooler or samples do not appear to have been compromised or tampered with.           |        |         |
| Samples were received on ice.  |        |         |
| Cooler Temperature is acceptable.  |        |         |
| Cooler Temperature is recorded.  |        |         |
| COC is present.  |        |         |
| COC is filled out in ink and legible.  |        |         |
| COC is filled out with all pertinent information.  |        |         |
| Is the Field Sampler's name present on COC?  |        |         |
| There are no discrepancies between the containers received and the COC.                  |        |         |
| Samples are received within Holding Time (excluding tests with immediate HTs)            |        |         |
| Sample containers have legible labels.   |        |         |
| Containers are not broken or leaking.  |        |         |
| Sample collection date/times are provided.   |        |         |
| Appropriate sample containers are used.  |        |         |
| Sample bottles are completely filled.  |        |         |
| Sample Preservation Verified.  |        |         |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs         |        |         |
| Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4"). |        |         |
| Multiphasic samples are not present.   |        |         |
| Samples do not require splitting or compositing.   |        |         |
| Residual Chlorine Checked.   |        |         |

# DATA VERIFICATION REPORT



May 30, 2024

Megan Meckley  
Arcadis  
28550 Cabot Drive  
Suite 500  
Novi, MI US 48377

CADENA project ID: E203728  
Project: Ford Livonia Transmission Plant - Soil Gas, Ground Water and Soil  
Project number: 30206169.401.03  
Event Specific Scope of Work References: Sample COC  
Laboratory: Eurofins Environment Testing LLC - Cleveland  
Laboratory submittal: 204122-1  
Sample date: 2024-05-06  
Report received by CADENA: 2024-05-30  
Initial Data Verification completed by CADENA: 2024-05-30  
Number of Samples:5  
Sample Matrices:Water  
Test Categories:GCMS VOC  
**Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.**

The following minor QC exceptions or missing information were noted:

HTQ - GCMS VOC SIM sample -005 analyses were performed outside of reference holding time so all associated results should be considered to be estimated and qualified with a UJ flag if non-detect.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at <http://clms.cadenaco.com/index.cfm>.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia



Project Scientist

CADENA Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

## CADENA Valid Qualifiers

| Valid Qualifiers | Description  |
|------------------|--|
| <                | Less than the reported concentration.  |
| >                | Greater than the reported concentration.   |
| B                | The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration. |
| E                | The analyte / Compound reported exceeds the calibration range and is considered estimated.   |
| EMPC             | Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.  |
| J                | Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.                     |
| J-               | The result is an estimated quantity, but the result may be biased low.   |
| JB               | NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED   |
| JH               | The sample result is considered estimated and is potentially biased high.  |
| JL               | The sample result is considered estimated and is potentially biased low.   |
| JUB              | NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED  |
| NJ               | Tentatively identified compound with approximated concentration.   |
| R                | Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)  |
| TNTC             | Too Numerous to Count - Asbestos and Microbiological Results.  |
| U                | Indicates that the analyte / compound was analyzed for, but not detected.  |
| UB               | The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.   |
| UJ               | The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.  |

# Qualified Results Summary

**CADENA Project ID:** E203728

**Laboratory:** Eurofins Environment Testing LLC - Cleveland

**Laboratory Submittal:** 204122-1

**Sample Name:** MW-37\_050624

**Lab Sample ID:** 2402041225

**Sample Date:** 5/6/2024

| Analyte             | Cas No.  | Report |       | Units | Valid<br>Qualifier |
|---------------------|----------|--------|-------|-------|--------------------|
|                     |          | Result | Limit |       |                    |
| <b>GC/MS VOC</b>    |          |        |       |       |                    |
| <u>OSW-8260DSIM</u> |          |        |       |       |                    |
| 1,4-Dioxane         | 123-91-1 | ND     | 2.0   | ug/l  | UJ                 |

# Analytical Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 204122-1

|                                  |              |              |              |              |
|----------------------------------|--------------|--------------|--------------|--------------|
| <b>Sample Name:</b> TRIP BLANK_6 | MW-65_050624 | MW-66_050624 | MW-38_050624 | MW-37_050624 |
| <b>Lab Sample ID:</b> 2402041221 | 2402041222   | 2402041223   | 2402041224   | 2402041225   |
| <b>Sample Date:</b> 5/6/2024     | 5/6/2024     | 5/6/2024     | 5/6/2024     | 5/6/2024     |

| Analyte                  | Cas No.  | Report |       | Valid | Report    |        | Valid | Report |           | Valid  | Report |       | Valid     | Report |       | Valid | Report    |        | Valid |       |           |
|--------------------------|----------|--------|-------|-------|-----------|--------|-------|--------|-----------|--------|--------|-------|-----------|--------|-------|-------|-----------|--------|-------|-------|-----------|
|                          |          | Result | Limit | Units | Qualifier | Result | Limit | Units  | Qualifier | Result | Limit  | Units | Qualifier | Result | Limit | Units | Qualifier | Result | Limit | Units | Qualifier |
| <b>GC/MSVOC</b>          |          |        |       |       |           |        |       |        |           |        |        |       |           |        |       |       |           |        |       |       |           |
| <u>OSW-8260D</u>         |          |        |       |       |           |        |       |        |           |        |        |       |           |        |       |       |           |        |       |       |           |
| 1,1-Dichloroethene       | 75-35-4  | ND     | 1.0   | ug/l  | ---       | ND     | 1.0   | ug/l   | ---       | ND     | 1.0    | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       |
| cis-1,2-Dichloroethene   | 156-59-2 | ND     | 1.0   | ug/l  | ---       | 2.5    | 1.0   | ug/l   | ---       | ND     | 1.0    | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       |
| Tetrachloroethene        | 127-18-4 | ND     | 1.0   | ug/l  | ---       | ND     | 1.0   | ug/l   | ---       | ND     | 1.0    | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       |
| trans-1,2-Dichloroethene | 156-60-5 | ND     | 1.0   | ug/l  | ---       | ND     | 1.0   | ug/l   | ---       | ND     | 1.0    | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       |
| Trichloroethene          | 79-01-6  | ND     | 1.0   | ug/l  | ---       | ND     | 1.0   | ug/l   | ---       | ND     | 1.0    | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       |
| Vinyl chloride           | 75-01-4  | ND     | 1.0   | ug/l  | ---       | 7.4    | 1.0   | ug/l   | ---       | 1.1    | 1.0    | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       | ND     | 1.0   | ug/l  | ---       |
| <u>OSW-8260DSIM</u>      |          |        |       |       |           |        |       |        |           |        |        |       |           |        |       |       |           |        |       |       |           |
| 1,4-Dioxane              | 123-91-1 |        |       |       |           | ND     | 2.0   | ug/l   | ---       | 0.93   | 2.0    | ug/l  | J         | ND     | 2.0   | ug/l  | ---       | ND     | 2.0   | ug/l  | UJ        |