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August 24, 2023

Mr. Josh Peters
On-Scene Coordinator
U.S. Environmental Protection Agency, Region 5
Superfund and Emergency Management Division
2565 Plymouth Road
Ann Arbor, MI 48105

**Subject: Data Validation Report
E Palestine Site - ER
EPA Contract No.: 68HE0519D0005
Task Order/Task Order Line Item No.: 68HE0520F0032/0001EB201
Document Tracking No. 2012**

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting this data validation report for 35 air samples (including one field duplicate sample and four field blank samples) collected at the E Palestine site. The samples were collected on June 15, 16, and 17, 2023, and were analyzed for acrylates by Eurofins Analytics, LLC. The final laboratory data package was received on June 26, 2023.

Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, East Palestine Train Derailment Site, East Palestine, Columbiana County, Ohio, Revision 3* (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), the *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

No rejection or qualification of results was required for these data packages. The results may be used as reported by the laboratory.

If you have any questions regarding this data validation report, please contact me via the project manager.

Sincerely,

Diane
MacMillan

Digitally signed by
Diane MacMillan
Date: 2023.08.24
10:56:07 -06'00'

Chemical Engineer

Enclosure

cc: Karl Schultz, Tetra Tech Program Manager
Dustin Grams, Tetra Tech Project Manager
Mayra Arroyo Ortiz, Tetra Tech Project Document Control Coordinator
TO-TOLIN File

ATTACHMENT

**DATA VALIDATION REPORT
EUROFINS ANALYTICS REPORT NOS. B170-089, B170-090,
B170-092, B170-096**

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

| | | | |
|-----------------------|---|--------------|---------------------------------------|
| Site Name | E Palestine Site - ER | TO/TOLIN No. | 68HE0520F0032/0001EB201 |
| Document Tracking No. | 2012a | | |
| Laboratory Report No. | B170-089 | Laboratory | Eurofins Analytics, LLC – Ashland, VA |
| Analyses | 2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029 | | |
| Samples and Matrix | Nine air samples including one field blank | | |
| Collection Date(s) | 06/15/2023 | | |
| Field Duplicate Pairs | None | | |
| Field QC Blanks | EPD-ST-FB-061523-1 | | |

INTRODUCTION

This checklist summarizes the Stage 2A validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, East Palestine Train Derailment Site, East Palestine, Columbiana County, Ohio, Revision 3* (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

OVERALL EVALUATION

No rejection or qualification of results was required for this data package. The results may be used as reported by the laboratory.

Data completeness:

| Within Criteria | Exceedance/Notes |
|-----------------|---|
| Y | <p>The results for the field blank were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligrams per cubic meter (mg/m3), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).</p> <p>The sample analysis time was reported as a default value of 00:00 hours for the LCSD in the analysis date field. The analysis date was correct. The sample analysis time for the LCSD was not required for the EDD; therefore, this value was not manually revised.</p> |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Sample preservation, receipt, and holding times:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| Y | |

Method blanks:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| Y | |

Field blanks:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| Y | |

Surrogates and labeled compounds:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

MS/MSDs:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

Laboratory duplicates:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Field duplicates:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

LCSs/LCSDs:

| Within Criteria | Exceedance/Notes |
|-----------------|---|
| Y | The Level II laboratory report, Level IV report, and the EDD have one or more minor discrepancies in the LCSD results (+/- 1 ug) and/or percent recoveries (+/- 1%) that were verified with the laboratory to be a significant figures issue. No qualification was applied. |

Sample dilutions:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

Re-extraction and reanalysis:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

MDLs/RLs:

| Within Criteria | Exceedance/Notes |
|-----------------|--|
| Y | Method detection limits were not reported. Non-detect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the EDD and attached qualified data table. |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Tentatively identified compounds:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

Other [none]:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

| | |
|----|---|
| J | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample. |
| J+ | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high. |
| J- | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low. |
| NJ | The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample. |
| R | The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample. |
| U | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit). |
| UJ | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria. |

E. PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS, LLC. REPORT NO. B170-089

| Samp_ID | Method | CAS_NO | Analyte | Lab_Result | Lab_Qual | MDL | RL | Units | VAL_Result | VAL_Qual |
|--------------------------|-----------|----------|-----------------------|------------|----------|-----|-------|-------|------------|----------|
| EPD-ST-8H-DW-D-061523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-DW-D-061523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-UW-H-061523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-UW-H-061523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-WA-01-061523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.016 | U | | 0.016 | ppm | 0.016 | U |
| EPD-ST-8H-WA-01-061523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-02-061523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013 | U | | 0.013 | ppm | 0.013 | U |
| EPD-ST-8H-WA-02-061523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.008 | U | | 0.008 | ppm | 0.008 | U |
| EPD-ST-8H-WA-03-061523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-03-061523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-04-061523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-04-061523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-05-061523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.017 | U | | 0.017 | ppm | 0.017 | U |
| EPD-ST-8H-WA-05-061523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.011 | U | | 0.011 | ppm | 0.011 | U |
| EPD-ST-8H-WA-06-061523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-06-061523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-FB-061523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 2.8 | U | | 2.8 | ug | 2.8 | U |
| EPD-ST-FB-061523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 1.3 | U | | 1.3 | ug | 1.3 | U |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

| | | | |
|-----------------------|---|--------------|---------------------------------------|
| Site Name | E Palestine Site - ER | TO/TOLIN No. | 68HE0520F0032/0001EB201 |
| Document Tracking No. | 2012b | | |
| Laboratory Report No. | B170-090 | Laboratory | Eurofins Analytics, LLC – Ashland, VA |
| Analyses | 2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029 | | |
| Samples and Matrix | Nine air samples including one field blank | | |
| Collection Date(s) | 06/17/2023 | | |
| Field Duplicate Pairs | None | | |
| Field QC Blanks | EPD-ST-FB-061723-1 | | |

INTRODUCTION

This checklist summarizes the Stage 2A validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, East Palestine Train Derailment Site, East Palestine, Columbiana County, Ohio, Revision 3* (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

OVERALL EVALUATION

No rejection or qualification of results was required for this data package. The results may be used as reported by the laboratory.

Data completeness:

| Within Criteria | Exceedance/Notes |
|-----------------|---|
| Y | <p>The results for the field blank were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligrams per cubic meter (mg/m³), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).</p> <p>The date received on the EDD is listed as 6/24/2023 while the Chain of Custody (COC) notes the date received as 6/19/2023. The date was changed in the EDD to match the COC.</p> |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

| | |
|--|---|
| | The sample analysis time was reported as a default value of 00:00 hours for the LCSD in the analysis date field. The analysis date was correct. The sample analysis time for the LCSD was not required for the EDD; therefore, this value was not manually revised. |
|--|---|

Sample preservation, receipt, and holding times:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y | |

Method blanks:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y | |

Field blanks:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y | |

Surrogates and labeled compounds:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

MS/MSDs:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Laboratory duplicates:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

Field duplicates:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

LCSs/LCSDs:

| Within Criteria | Exceedance/Notes |
|--------------------|---|
| Y | The Level II laboratory report, Level IV report, and the EDD have one or more minor discrepancies in the LCSD results (+/- 1 ug) and/or percent recoveries (+/- 1%) that were verified with the laboratory to be a significant figures issue. No qualification was applied. |

Sample dilutions:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

Re-extraction and reanalysis:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

MDLs/RLs:

| Within Criteria | Exceedance/Notes |
|--------------------|--|
| Y | Method detection limits were not reported. Non-detect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the EDD and attached qualified data table. |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Tentatively identified compounds:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

Other [none]:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

| | |
|----|---|
| J | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample. |
| J+ | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high. |
| J- | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low. |
| NJ | The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample. |
| R | The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample. |
| U | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit). |
| UJ | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria. |

E. PALESTINE SITE - ER AIR ANALYTICAL SUMMARY
EUROFINS ANALYTICS, LLC REPORT NO. B170-090

| Samp_ID | Method | CAS_NO | Analyte | Lab_Result | Lab_Qual | MDL | RL | Units | VAL_Result | VAL_Qual |
|--------------------------|-----------|----------|-----------------------|------------|----------|-----|-------|-------|------------|----------|
| EPD-ST-8H-DW-B-061723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013 | U | | 0.013 | ppm | 0.013 | U |
| EPD-ST-8H-DW-B-061723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-UW-F-061723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-UW-F-061723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-01-061723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-01-061723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-WA-02-061723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013 | U | | 0.013 | ppm | 0.013 | U |
| EPD-ST-8H-WA-02-061723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-WA-03-061723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-03-061723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-WA-04-061723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013 | U | | 0.013 | ppm | 0.013 | U |
| EPD-ST-8H-WA-04-061723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-WA-05-061723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-05-061723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-WA-06-061723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-06-061723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | | 0.009 | ppm | 0.009 | U |
| EPD-ST-FB-061723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 2.8 | U | | 2.8 | ug | 2.8 | U |
| EPD-ST-FB-061723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 1.3 | U | | 1.3 | ug | 1.3 | U |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

| | | | |
|-----------------------|---|--------------|---------------------------------------|
| Site Name | E Palestine Site - ER | TO/TOLIN No. | 68HE0520F0032/0001EB201 |
| Document Tracking No. | 2012c | | |
| Laboratory Report No. | B170-092 | Laboratory | Eurofins Analytics, LLC – Ashland, VA |
| Analyses | 2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029 | | |
| Samples and Matrix | Seven air samples including one field blank sample | | |
| Collection Date(s) | 06/16/2023 | | |
| Field Duplicate Pairs | None | | |
| Field QC Blanks | EPD-ST-FB-061623-1 | | |

INTRODUCTION

This checklist summarizes the Stage 2A validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, East Palestine Train Derailment Site, East Palestine, Columbiana County, Ohio, Revision 3* (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

OVERALL EVALUATION

No rejection or qualification of results was required for this data package. The results may be used as reported by the laboratory.

Data completeness:

| Within Criteria | Exceedance/Notes |
|-----------------|--|
| Y | <p>The results for the field blank were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligrams per cubic meter (mg/m³), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).</p> <p>The sample analysis time was reported as a default value of 00:00 hours for the LCSD in the analysis date field. The analysis date was correct. The sample analysis time for the LCSD was not required for the EDD; therefore, this value was not manually revised.</p> |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Sample preservation, receipt, and holding times:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| Y | |

Method blanks:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| Y | |

Field blanks:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| Y | |

Surrogates and labeled compounds:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

MS/MSDs:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

Laboratory duplicates:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Field duplicates:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

LCSs/LCSDs:

| Within Criteria | Exceedance/Notes |
|-----------------|---|
| Y | The Level II laboratory report, Level IV report, and the EDD have one or more minor discrepancies in the LCSD results (+/- 1 ug) and/or percent recoveries (+/- 1%) that were verified with the laboratory to be a significant figures issue. No qualification was applied. |

Sample dilutions:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

Re-extraction and reanalysis:

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA | |

MDLs/RLs:

| Within Criteria | Exceedance/Notes |
|-----------------|--|
| Y | Method detection limits were not reported. Non-detect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the EDD and attached qualified data table. |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Tentatively identified compounds:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

Other [None]:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

| | |
|----|---|
| J | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample. |
| J+ | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high. |
| J- | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low. |
| NJ | The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample. |
| R | The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample. |
| U | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit). |
| UJ | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria. |

E. PALESTINE SITE - ER AIR ANALYTICAL SUMMARY
EUROFINS ANALYTICS, LLC REPORT NO. B170-092

| Samp_ID | Method | CAS_NO | Analyte | Lab_Result | Lab_Qual | MDL | RL | Units | VAL_Result | VAL_Qual |
|--------------------------|-----------|----------|-----------------------|------------|----------|-----|-------|-------|------------|----------|
| EPD-ST-8H-DW-B-061623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-DW-B-061623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-UW-F-061623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-UW-F-061623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-02-061623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-02-061623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-03-061623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.03 | U | | 0.03 | ppm | 0.03 | U |
| EPD-ST-8H-WA-03-061623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.02 | U | | 0.02 | ppm | 0.02 | U |
| EPD-ST-8H-WA-05-061623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-05-061623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-06-061623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-06-061623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-FB-061623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 2.8 | U | | 2.8 | ug | 2.8 | U |
| EPD-ST-FB-061623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 1.3 | U | | 1.3 | ug | 1.3 | U |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

| | | | |
|-----------------------|---|--------------|---------------------------------------|
| Site Name | E Palestine Site - ER | TO/TOLIN No. | 68HE0520F0032/0001EB201 |
| Document Tracking No. | 2012d | | |
| Laboratory Report No. | B170-096 | Laboratory | Eurofins Analytics, LLC – Ashland, VA |
| Analyses | 2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029 | | |
| Samples and Matrix | Ten air samples including one field blank and one field duplicate pair | | |
| Collection Date(s) | 06/16/2023 | | |
| Field Duplicate Pairs | EPD-ST-SH-WA-03-061623-2/ EPD-ST-SH-WA-33-061623-2 | | |
| Field QC Blanks | EPD-ST-FB-061623-2 | | |

INTRODUCTION

This checklist summarizes the Stage 2A validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, East Palestine Train Derailment Site, East Palestine, Columbiana County, Ohio, Revision 3* (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

OVERALL EVALUATION

No rejection or qualification of results was required for this data package. The results may be used as reported by the laboratory.

Data completeness:

| Within Criteria | Exceedance/Notes |
|-----------------|--|
| Y | <p>The results for the field blank were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligrams per cubic meter (mg/m³), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).</p> <p>The sample analysis time was reported as a default value of 00:00 hours for the LCSD in the analysis date field. The analysis date was correct. The sample analysis time for the LCSD was not required for the EDD; therefore, this value was not manually revised.</p> |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Sample preservation, receipt, and holding times:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| Y | |

Method blanks:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| Y | |

Field blanks:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| Y | |

Surrogates and labeled compounds:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

MS/MSDs:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

Laboratory duplicates:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Field duplicates:

| Within Criteria | Exceedance/Notes |
|------------------------|-------------------------|
| Y | |

LCSs/LCSDs:

| Within Criteria | Exceedance/Notes |
|------------------------|---|
| Y | The Level II laboratory report, Level IV report, and the EDD have one or more minor discrepancies in the LCSD results (+/- 1 ug) and/or percent recoveries (+/- 1%) that were verified with the laboratory to be a significant figures issue. No qualification was applied. |

Sample dilutions:

| Within Criteria | Exceedance/Notes |
|------------------------|-------------------------|
| NA | |

Re-extraction and reanalysis:

| Within Criteria | Exceedance/Notes |
|------------------------|-------------------------|
| NA | |

MDLs/RLs:

| Within Criteria | Exceedance/Notes |
|------------------------|--|
| Y | Method detection limits were not reported. Non-detect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the EDD and attached qualified data table. |

**DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Tentatively identified compounds:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

Other [None]:

| Within Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA | |

Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

| | |
|----|---|
| J | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample. |
| J+ | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high. |
| J- | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low. |
| NJ | The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample. |
| R | The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample. |
| U | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit). |
| UJ | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria. |

E. PALESTINE SITE - ER AIR ANALYTICAL SUMMARY
EUROFINS ANALYTICS, LLC REPORT NO. B170-096

| Samp_ID | Method | CAS_NO | Analyte | Lab_Result | Lab_Qual | MDL | RL | Units | VAL_Result | VAL_Qual |
|--------------------------|-----------|----------|-----------------------|------------|----------|-----|-------|-------|------------|----------|
| EPD-ST-8H-DW-B-061623-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-DW-B-061623-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-UW-F-061623-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-UW-F-061623-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-01-061623-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-01-061623-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-02-061623-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-02-061623-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-03-061623-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-03-061623-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-04-061623-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-04-061623-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-05-061623-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-05-061623-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-06-061623-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-06-061623-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-33-061623-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-33-061623-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | | 0.01 | ppm | 0.01 | U |
| EPD-ST-FB-061623-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 2.8 | U | | 2.8 | ug | 2.8 | U |
| EPD-ST-FB-061623-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 1.3 | U | | 1.3 | ug | 1.3 | U |