



December 13, 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

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**Subject: Data Validation Report
E Palestine Site - ER
EPA Contract No.: 68HE0519D0005
Task Order/Task Order Line Item No.: 68HE0520F0032/0001EB201
Document Tracking No. 2240**

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting this data validation report for 57 air samples (including 5 field duplicate pairs, 4 field blank samples, and 2 media blank samples) collected at the E Palestine site. The samples were collected on August 17 and 18, 2023, and were analyzed for acrylates by Eurofins Analytics, LLC. The final laboratory data package was received on August 29, 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), and the *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

No qualification or rejection 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,

Kayla Phye Digitally signed by Kayla Phye
Date: 2023.12.13 14:54:57
-07'00'

Environmental Chemist

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

ATTACHMENTS

**DATA VALIDATION REPORT
EUROFINS ANALYTICS, LLC REPORT NOS.
B230-247, B233-086, B233-087, B233-088**

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

| | | | |
|-----------------------|--|--------------|---------------------------------------|
| Site Name | E Palestine Site – ER | TO/TOLIN No. | 68HE0520F0032/0001EB201 |
| Document Tracking No. | 2240a | | |
| Laboratory Report No. | B230-247 | Laboratory | Eurofins Analytics, LLC – Ashland, VA |
| Analyses | n-Butyl acrylate by NIOSH Method 1450M | | |
| Samples and Matrix | 19 air samples including 1 field blank sample, 1 media blank sample, and 2 field duplicate pairs | | |
| Collection Date(s) | 08/17/2023 | | |
| Field Duplicate Pairs | EPD-PB-OD-04-081723/EPD-PB-OD-044-081723 EPD-PB-WA-03-081723/EPD-PB-WA-033-081723 | | |
| Field QC Blanks | EPD-PB-FB-01-081723 and EPD-PB-MB-01-081723 | | |

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 (QAPP), 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 VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Data completeness:

| Within Criteria | Exceedance/Notes |
|-----------------|--|
| Y | <p>The results for the field blank sample and media blank sample were reported in units of micrograms (µg) while the other field 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 in units of ppm in the laboratory electronic data deliverable (EDD).</p> <p>The site-specific QAPP specifies analysis of acrylates in air by Eurofins Analytics, LLC standard operating procedure (SOP) IHGC-001-v.22-3. The laboratory confirmed that NIOSH Method 1450M, which is mentioned in the laboratory deliverables, is equivalent to SOP IHGC-001-v.22-3; therefore, these method references may be used interchangeably.</p> <p>The ratio of field quality control (QC) samples (field blank samples, media blank samples, and field duplicate samples) to non-QC field samples is monitored independent of this validation and therefore the ratio of field QC samples to non-QC field samples was not verified during this validation. No qualifications were applied because all field sample results were nondetect.</p> <p>Note, the following fields in the laboratory EDD may be formatted as date only or as date/time: Date_Collected, Date_Received, Date_Extracted, and Date_Analyzed. The time value was not required to be provided in the EDD. If no time value was provided, then the entered value may appear as date only or with a default time value of 0:00, 00:00, or similar.</p> |

Sample preservation, receipt, and holding times:

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

Method blanks:

| Within Criteria | Exceedance/Notes |
|-----------------|--|
| N | <p>Nondetect results for laboratory method blank LMB IHG230818B and laboratory reagent blank (LRB) LRB IHG230818B were reported as “0” in the laboratory EDD rather than at the reporting limit (RL). The laboratory was contacted on August 28, 2023, and agreed to report nondetect laboratory method blank and LRB results at the RL in future laboratory EDDs. No qualifications were applied.</p> |

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

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 | |

Field duplicates:

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

LCSs/LCSDs:

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

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

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 (MDL) were not reported. Nondetect sample results were reported as less than the RL in the laboratory report and at the RL (flagged U) in the validated EDD and attached analytical results summary. |

Tentatively identified compounds:

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

Other [None]:

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

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

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. B230-247

| Sample ID | Method | CAS# | Analyte | Lab Result | Lab Qual | RL | Units | VAL_Result | VAL_Qual |
|----------------------|--------------------|----------|------------------|------------|----------|--------|-------|------------|----------|
| EPD-PB-DW-D-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-FB-01-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2 | U | 2 | ug | 2 | U |
| EPD-PB-MB-01-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2 | U | 2 | ug | 2 | U |
| EPD-PB-OD-01-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-02-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-03-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-04-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-044-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-05-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-06-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-07-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-UW-H-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-01-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-02-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-03-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-033-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-04-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-05-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-06-081723 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | 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. | 2240b | | |
| Laboratory Report No. | B233-086 | Laboratory | Eurofins Analytics, LLC – Ashland, VA |
| Analyses | n-Butyl acrylate by NIOSH Method 1450M | | |
| Samples and Matrix | 19 air samples including 1 field blank sample, 1 media blank sample, and 2 field duplicate pairs | | |
| Collection Date(s) | 08/18/2023 | | |
| Field Duplicate Pairs | EPD-PB-OD-07-081823/EPD-PB-OD-077-081823 EPD-PB-WA-02-081823/EPD-PB-WA-022-081823 | | |
| Field QC Blanks | EPD-PB-FB-01-081823 and EPD-PB-MB-01-081823 | | |

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 (QAPP), 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 VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Data completeness:

| Within Criteria | Exceedance/Notes |
|-----------------|--|
| Y | <p>The results for the field blank sample and media blank sample were reported in units of micrograms (µg) while the other field 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 in units of ppm in the laboratory electronic data deliverable (EDD).</p> <p>The site-specific QAPP specifies analysis of acrylates in air by Eurofins Analytics, LLC standard operating procedure (SOP) IHGC-001-v.22-3. The laboratory confirmed that NIOSH Method 1450M, which is mentioned in the laboratory deliverables, is equivalent to SOP IHGC-001-v.22-3; therefore, these method references may be used interchangeably.</p> <p>The ratio of field quality control (QC) samples (field blank samples, media blank samples, and field duplicate samples) to non-QC field samples is monitored independent of this validation and therefore the ratio of field QC samples to non-QC field samples was not verified during this validation. No qualifications were applied because all field sample results were nondetect.</p> <p>Note, the following fields in the laboratory EDD may be formatted as date only or as date/time: Date_Collected, Date_Received, Date_Extracted, and Date_Analyzed. The time value was not required to be provided in the EDD. If no time value was provided, then the entered value may appear as date only or with a default time value of 0:00, 00:00, or similar.</p> |

Sample preservation, receipt, and holding times:

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

Method blanks:

| Within Criteria | Exceedance/Notes |
|-----------------|--|
| N | <p>Nondetect results for laboratory method blank LMB IHG230821A and laboratory reagent blank (LRB) LRB IHG230821A were reported as “0” in the laboratory EDD rather than at the reporting limit (RL). The laboratory was contacted on August 28, 2023, and agreed to report nondetect laboratory method blank and LRB results at the RL in future laboratory EDDs. No qualifications were applied.</p> |

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

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 | |

Field duplicates:

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

LCSs/LCSDs:

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

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

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 (MDL) were not reported. Nondetect sample results were reported as less than the RL in the laboratory report and at the RL (flagged U) in the validated EDD and attached analytical results summary. |

Tentatively identified compounds:

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

Other [None]:

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

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

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. B233-086

| Sample ID | Method | CAS# | Analyte | Lab Result | Lab Qual | RL | Units | VAL_Result | VAL_Qual |
|----------------------|--------------------|----------|------------------|------------|----------|--------|-------|------------|----------|
| EPD-PB-DW-B-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-FB-01-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2 | U | 2 | ug | 2 | U |
| EPD-PB-MB-01-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2 | U | 2 | ug | 2 | U |
| EPD-PB-OD-01-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-02-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-03-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-04-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-05-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-06-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-07-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-OD-077-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-UW-F-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-01-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-02-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-022-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-03-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-04-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-05-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | U |
| EPD-PB-WA-06-081823 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0045 | U | 0.0045 | ppm | 0.0045 | 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. | 2240c | | |
| Laboratory Report No. | B233-087 | 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 | 10 air samples including 1 field blank sample and 1 field duplicate pair | | |
| Collection Date(s) | 08/17/2023 | | |
| Field Duplicate Pairs | EPD-ST-8H-WA-05-081723-2/EPD-ST-8H-WA-55-081723-2 | | |
| Field QC Blanks | EPD-ST-FB-081723-2 | | |

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

Data completeness:

| Within Criteria | Exceedance/Notes |
|--------------------|--|
| Y | <p>The results for the field blank sample 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 in units of ppm in the laboratory electronic data deliverable (EDD).</p> <p>Rohm & Haas IH9805 was cited in the AIHA certification as “IHGC-P029” and may be cited by the abbreviation “Rohm & Haas IH9805” or “IHGC-P029” interchangeably throughout the laboratory report.</p> <p>Note, the following fields in the laboratory EDD may be formatted as date only or as date/time: Date_Collected, Date_Received, Date_Extracted, and Date_Analyzed. The time value was not required to be provided in the EDD. If no time value was provided, then the entered value may appear as date only or with a default time value of 0:00, 00:00, or similar.</p> <p>The chain of custody was revised to correct the average flow rate for samples EPD-ST-8H-WA-01-081723-2 and EPD-ST-8H-WA-04-081723-2 on August 22, 2023.</p> |

Sample preservation, receipt, and holding times:

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

Method blanks:

| Within Criteria | Exceedance/Notes |
|--------------------|--|
| N | <p>Nondetect results for laboratory method blank LMB IHG230821B and laboratory reagent blank (LRB) LRB IHG230821B were reported as “0” in the laboratory EDD rather than at the reporting limit (RL). The laboratory was contacted on August 28, 2023, and agreed to report nondetect laboratory method blank and LRB results at the RL in future laboratory EDDs.</p> |

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

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 | |

Field duplicates:

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

LCSs/LCSDs:

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

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

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 (MDL) were not reported. Nondetect sample results were reported as less than the RL in the laboratory report and at the RL (flagged U) in the validated EDD and attached analytical results summary. |

Tentatively identified compounds:

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

Other [None]:

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

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

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. B233-087

| Sample ID | Method | CAS# | Analyte | Lab Result | Lab Qual | RL | Units | VAL_Result | VAL_Qual |
|--------------------------|-----------|----------|-----------------------|------------|----------|-------|-------|------------|----------|
| EPD-ST-8H-DW-B-081723-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-DW-B-081723-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-UW-F-081723-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-UW-F-081723-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-01-081723-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-01-081723-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-02-081723-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-02-081723-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-03-081723-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-03-081723-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-04-081723-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-04-081723-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-05-081723-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-05-081723-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-06-081723-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-06-081723-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-55-081723-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-55-081723-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-FB-081723-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 2.8 | U | 2.8 | ug | 2.8 | U |
| EPD-ST-FB-081723-2 | 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. | 2240d | | |
| Laboratory Report No. | B233-088 | 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 sample | | |
| Collection Date(s) | 08/17/2023 | | |
| Field Duplicate Pairs | None | | |
| Field QC Blanks | EPD-ST-FB-081723-1 | | |

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 (QAPP), 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 VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT**

Data completeness:

| Within Criteria | Exceedance/Notes |
|-----------------|---|
| Y | <p>The results for the field blank sample 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 in units of ppm in the laboratory electronic data deliverable (EDD).</p> <p>Rohm & Haas IH9805 was cited in the AIHA certification as “IHGC-P029” and may be cited by the abbreviation “Rohm & Haas IH9805” or “IHGC-P029” interchangeably throughout the laboratory report.</p> <p>Note, the following fields in the laboratory EDD may be formatted as date only or as date/time: Date_Collected, Date_Received, Date_Extracted, and Date_Analyzed. The time value was not required to be provided in the EDD. If no time value was provided, then the entered value may appear as date only or with a default time value of 0:00, 00:00, or similar.</p> |

Sample preservation, receipt, and holding times:

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

Method blanks:

| Within Criteria | Exceedance/Notes |
|-----------------|--|
| N | <p>Nondetect results for laboratory method blank LMB IHG230821B and laboratory reagent blank (LRB) LRB IHG230821B were reported as “0” in the laboratory EDD rather than at the reporting limit (RL). The laboratory was contacted on August 28, 2023, and agreed to report nondetect laboratory method blank and LRB results at the RL in future laboratory EDDs.</p> |

Field blanks:

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

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

Surrogates and labeled compounds:

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

MS/MSDs:

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

Laboratory duplicates:

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

Field duplicates:

| Within Criteria | Exceedance/Notes |
|------------------------|--|
| N | Per the site-specific QAPP, 1 field duplicate sample is required per 10 samples collected. However, fewer than 1 field duplicate sample per 10 samples were collected with this sample group. Based on professional judgement, no qualifications were applied. |

LCSs/LCSDs:

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

Sample dilutions:

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

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

Re-extraction and reanalysis:

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

MDLs/RLs:

| Within Criteria | Exceedance/Notes |
|--------------------|--|
| Y | Method detection limits (MDL) were not reported. Nondetect sample results were reported as less than the RL in the laboratory report and at the RL (flagged U) in the validated EDD and attached analytical results summary. |

Tentatively identified compounds:

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

Other [None]:

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

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

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. B233-088

| Sample ID | Method | CAS# | Analyte | Lab Result | Lab Qual | RL | Units | VAL_Result | VAL_Qual |
|--------------------------|-----------|----------|-----------------------|------------|----------|-------|-------|------------|----------|
| EPD-ST-8H-DW-D-081723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-DW-D-081723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-UW-H-081723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-UW-H-081723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-01-081723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-01-081723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-02-081723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-02-081723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-03-081723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-03-081723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-04-081723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-04-081723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-05-081723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-05-081723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-06-081723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-06-081723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-FB-081723-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 2.8 | U | 2.8 | ug | 2.8 | U |
| EPD-ST-FB-081723-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 1.3 | U | 1.3 | ug | 1.3 | U |