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September 26, 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. 1980**

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting this data validation report for fifty-five air samples (including three field duplicate samples, four field blank samples, and one media blank) collected at the E Palestine site. The samples were collected on April 25 and 26, 2023, and were analyzed for acrylates by Eurofins Analytics, LLC laboratory in Ashland, Virginia. The final laboratory data package was received on August 3, 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 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,

Tom Hahne
Digitally signed
by Tom Hahne
Date: 2023.09.26
15:34:28 -05'00'

Quality Reviewer

Enclosure

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

ATTACHMENT

**DATA VALIDATION REPORT
EUROFINS ANALYTICS, LLC REPORT NOS. B118-247, B118-249,
B118-250, AND B118-251**

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

| | | | |
|-----------------------|--|--------------|---------------------------------------|
| Site Name | E Palestine Site - ER | TO/TOLIN No. | 68HE0520F0032/0001EB201 |
| Document Tracking No. | 1980a | | |
| Laboratory Report No. | B118-247 | Laboratory | Eurofins Analytics, LLC – Ashland, VA |
| Analyses | n-Butyl acrylate by NIOSH Method 1450M | | |
| Samples and Matrix | 29 air samples including 1 field blank, 1 media blank, and 2 field duplicate pairs | | |
| Collection Date(s) | 04/25/2023 | | |
| Field Duplicate Pairs | EPD-PB-CM-011-042523-1/EPD-PB-CM-11-042523-1 EPD-PB-OD-077-042523-1/EPD-PB-OD-07-042523-1 | | |
| Field QC Blanks | EPD-PB-FB-01-042523-1 and EPD-PB-MB-01-042523-1 | | |

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

Data completeness:

| Within Criteria | Exceedance/Notes |
|-----------------|---|
| N | <p>The results for the field blank and media blank 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 extraction date and time information in the laboratory EDD is blank for samples. During the data validation effort, extraction dates were added to match those in the preparation log in the laboratory report.</p> <p>The sample analysis time is reported as a default value of 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. Since the sample analysis time for the LCSD is not required for the validated EDD, this value was not manually revised.</p> <p>A unique sample ID for the LCSD was not provided in the laboratory EDD. Unique sample IDs are needed to avoid overwriting other QC sample data when validated EDDs are uploaded to the Scribe database. The LCSD ID in the Samp_No and Lab_Samp_No fields of the validated EDD were manually revised to match those in the laboratory report.</p> <p>The chain of custody needed to be amended for samples EPD-PB-OD-07-042523-1 and EPD-PB-CM-09-042523-1. EPD-PB-OD-07-042523-1 had the badge number corrected from QF2394 to QF23964. EPD-PB-CM-09-042523-1 had the total time corrected from 721 to 720 minutes.</p> |

Sample preservation, receipt, and holding times:

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

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

Method blanks:

| Within Criteria | Exceedance/Notes |
|--------------------|--|
| N | Laboratory reagent blank (LRB IHG230428B) was reported as nondetect (flagged U) with a result of 0 ug in the laboratory EDD rather than at the reporting limit. Additionally, the laboratory method blank (LMB IHG230428B) detected n-butyl acrylate at concentrations less than the reporting limit. |

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 |
|------------------------|---|
| N | The site-specific QAPP requires a laboratory reagent blank (LRB), laboratory media blank (LMB), laboratory control sample (LCS), and LCS duplicate (LCSD) to be analyzed per batch of 20 samples. However, the laboratory analyzed 29 field samples in one sample preparation batch that included one LRB, LMB, LCS, and LCSD, when the batch should have included two LRBs, LMBs, LCSs, and LCSDs. The laboratory was contacted about this deviation from the site-specific QAPP and agreed that moving forward they would follow the quality control (QC) sample frequency requirements in the site-specific QAPP. No qualifications were applied based on professional judgment because the QC sample results met the QAPP acceptance criteria, and the QC sample results from previous datasets for this project have met the QAPP acceptance criteria. |

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 validated EDD and attached analytical results summary. |

**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. B118-247

| Sample ID | Method | Cas. No. | Analyte | Lab_Result | Lab_Qual | RL | Units | Val_Result | Val_Qual |
|-------------------------|--------------------|----------|------------------|------------|----------|--------|-------|------------|----------|
| EPD-PB-BKBA-01-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-BKBA-02-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-CM-06-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-CM-07-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-CM-08-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-CM-09-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-CM-10-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-CM-11-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-CM-011-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-CM-12-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-CM-14-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-DW-C-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-OD-01-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-OD-02-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-OD-03-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-OD-04-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-OD-05-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-OD-06-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-OD-07-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-OD-077-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-UW-G-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-WA-01-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-WA-02-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-WA-03-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-WA-04-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-WA-05-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-WA-06-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091 | U | 0.0091 | ppm | 0.0091 | U |
| EPD-PB-FB-01-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2 | U | 2 | ug | 2 | U |
| EPD-PB-MB-01-042523-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2 | U | 2 | ug | 2 | 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. | 1980b | | |
| Laboratory Report No. | B118-249 | 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 | 8 air samples including 1 field blank | | |
| Collection Date(s) | 04/26/2023 | | |
| Field Duplicate Pairs | None | | |
| Field QC Blanks | EPD-ST-FB-042623-1 | | |

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

Data completeness:

| Within Criteria | Exceedance/Notes |
|-----------------|--|
| N | <p>Level II laboratory report does not include some required QC information; therefore, the Level IV laboratory report was used for this data validation effort.</p> <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/m^3), 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 is 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>The sample analysis time is reported as a default value of 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. Since the sample analysis time for the LCSD is not required for the validated EDD, this value was not manually revised.</p> <p>EPD-ST-8H-WA-06-042623-1 was not collected due to a faulty pump; therefore, the sample was not shipped to the laboratory for analysis.</p> <p>The laboratory report was amended for samples EPD-ST-8H-DW-B-042623-1, EPD-ST-8H-UW-H-042623-2, and EPD-ST-FB-042623-2. EPD-ST-8H-DW-B-042623-1 average flow was corrected from 0.05629 to 0.05331, and the volume corrected from 27.02 to 25.59. EPD-ST-8H-UW-H-042623-2 had the average flow corrected from 0.052864 to 0.052865, and the volume corrected from 25.37 to 25.38. EPD-ST-FB-042623-2 had to have its sample ID corrected from EPD-ST-FB-01-042623-2 to EPD-ST-FB-042623-2.</p> |

Sample preservation, receipt, and holding times:

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

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

Method blanks:

| Within Criteria | Exceedance/Notes |
|-----------------|---|
| Y | Laboratory method blank (LMB IHG230428E) and laboratory reagent blank (LRB IHG230428E) were reported as nondetect (flagged U) with a result of 0 ug in the laboratory EDD rather than at the reporting limit. The laboratory was contacted on and resolved the LMB and LRB results in future laboratory EDDs. |

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 |
|-----------------|------------------|
| NA | |

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

LCSs/LCSDs:

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

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 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. B118-249

| Sample ID | Method | Cas. No. | Analyte | Lab_Result | Lab_Qual | RL | Units | Val_Result | Val_Qual |
|--------------------------|-----------|----------|-----------------------|------------|----------|-------|-------|------------|----------|
| EPD-ST-8H-DW-B-042623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-DW-B-042623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-UW-F-042623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.016 | U | 0.016 | ppm | 0.016 | U |
| EPD-ST-8H-UW-F-042623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.011 | U | 0.011 | ppm | 0.011 | U |
| EPD-ST-8H-WA-01-042623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-01-042623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-02-042623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-02-042623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-03-042623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013 | U | 0.013 | ppm | 0.013 | U |
| EPD-ST-8H-WA-03-042623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-WA-04-042623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-04-042623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-WA-05-042623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-05-042623-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | 0.009 | ppm | 0.009 | U |
| EPD-ST-FB-042623-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 2.8 | U | 2.8 | ug | 2.8 | U |
| EPD-ST-FB-042623-1 | 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. | 1980c | | |
| Laboratory Report No. | B118-250 | 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 | 8 air samples including 1 field blank | | |
| Collection Date(s) | 04/25/2023 | | |
| Field Duplicate Pairs | None | | |
| Field QC Blanks | EPD-ST-FB-042523-1 | | |

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

Data completeness:

| Within Criteria | Exceedance/Notes |
|-----------------|---|
| N | <p>Level II laboratory report does not include some required QC information; therefore, the Level IV laboratory report was used for this data validation effort.</p> <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 in units of ppm in the laboratory electronic data deliverable (EDD).</p> <p>Rohm & Haas IH9805 is 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>The sample analysis time is reported as a default value of 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. Since the sample analysis time for the LCSD is not required for the validated EDD, this value was not manually revised.</p> <p>Sample EPD-ST-8H-WA-05-042523-1 was not collected due to a faulty pump; therefore, the sample was not shipped to the laboratory for analysis.</p> |

Sample preservation, receipt, and holding times:

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

Method blanks:

| Within Criteria | Exceedance/Notes |
|-----------------|---|
| Y | <p>Laboratory method blank (LMB IHG230428E) and laboratory reagent blank (LRB IHG230428E) were reported as nondetect (flagged U) with a result of 0 ug in the laboratory EDD rather than at the reporting limit. The laboratory was contacted and resolved the LMB and LRB results 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 |
|--------------------|------------------|
| NA | |

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 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 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. B118-250

| Sample ID | Method | Cas. No | Analyte | Lab_Result | Lab_Qual | RL | Units | Val_Result | Val_Qual |
|--------------------------|-----------|----------|-----------------------|------------|----------|-------|-------|------------|----------|
| EPD-ST-8H-DW-C-042523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-DW-C-042523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-UW-G-042523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013 | U | 0.013 | ppm | 0.013 | U |
| EPD-ST-8H-UW-G-042523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-WA-01-042523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-01-042523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-02-042523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-02-042523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-03-042523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.011 | U | 0.011 | ppm | 0.011 | U |
| EPD-ST-8H-WA-03-042523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.008 | U | 0.008 | ppm | 0.008 | U |
| EPD-ST-8H-WA-04-042523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013 | U | 0.013 | ppm | 0.013 | U |
| EPD-ST-8H-WA-04-042523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-WA-06-042523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013 | U | 0.013 | ppm | 0.013 | U |
| EPD-ST-8H-WA-06-042523-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | 0.009 | ppm | 0.009 | U |
| EPD-ST-FB-042523-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 2.8 | U | 2.8 | ug | 2.8 | U |
| EPD-ST-FB-042523-1 | 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. | 1980d | | |
| Laboratory Report No. | B118-251 | 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 and 1 field duplicate pair | | |
| Collection Date(s) | 04/25/2023 | | |
| Field Duplicate Pairs | EPD-ST-8H-WA-11-042523-2/EPD-ST-8H-WA-01-042523-2 | | |
| Field QC Blanks | EPD-ST-FB-042523-2 | | |

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 |
|-----------------|--|
| N | <p>Level II laboratory report does not include some required QC information; therefore, the Level IV laboratory report was used for this data validation effort.</p> <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/m^3), 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 is 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>The sample analysis time is reported as a default value of 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. Since the sample analysis time for the LCSD is not required for the validated EDD, this value was not manually revised.</p> <p>The report was amended to correct sampling date from 04/05/2023 to the correct date, 04/25/2023.</p> |

Sample preservation, receipt, and holding times:

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

Method blanks:

| Within Criteria | Exceedance/Notes |
|-----------------|--|
| Y | Laboratory method blank (LMB IHG230428F) and laboratory reagent blank (LRB IHG230428F) were reported as nondetect (flagged U) with a result of 0 ug in the laboratory EDD rather than at the reporting limit. The laboratory was contacted on August 28, 2023, and resolved the LMB and LRB results in future laboratory EDDs. |

**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 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 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. B118-251

| Sample ID | Method | Cas. No. | Analyte | Lab_Result | Lab_Qual | RL | Units | Val_Result | Val_Qual |
|--------------------------|-----------|----------|-----------------------|------------|----------|-------|-------|------------|----------|
| EPD-ST-8H-DW-B-042523-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-DW-B-042523-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-UW-F-042523-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-UW-F-042523-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-01-042523-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-01-042523-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-11-042523-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-11-042523-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-02-042523-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-02-042523-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-03-042523-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-03-042523-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-8H-WA-04-042523-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014 | U | 0.014 | ppm | 0.014 | U |
| EPD-ST-8H-WA-04-042523-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.009 | U | 0.009 | ppm | 0.009 | U |
| EPD-ST-8H-WA-05-042523-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.016 | U | 0.016 | ppm | 0.016 | U |
| EPD-ST-8H-WA-05-042523-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.011 | U | 0.011 | ppm | 0.011 | U |
| EPD-ST-8H-WA-06-042523-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015 | U | 0.015 | ppm | 0.015 | U |
| EPD-ST-8H-WA-06-042523-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 0.01 | U | 0.01 | ppm | 0.01 | U |
| EPD-ST-FB-042523-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 2.8 | U | 2.8 | ug | 2.8 | U |
| EPD-ST-FB-042523-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate | 1.3 | U | 1.3 | ug | 1.3 | U |