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November 9, 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. 2110**

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting this data validation report for 77 air samples (including 5 field duplicate samples, 5 field blank samples, and 3 media blanks) collected at the E Palestine site. The samples were collected on July 19 and 21, 2023, and were analyzed for acrylates by Eurofins Analytics, LLC at their Ashland, Virginia laboratory. The final laboratory data package was received on July 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)*, and 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,

Amelia Byl Digitally signed by Amelia Byl
Date: 2023.11.09 14:34:33 -0700

Environmental Chemist

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. B202-201, B202-202,
B205-118, AND B205-119**

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

Site Name	E Palestine Site - ER	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	2110a	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Laboratory Report No.	B202-201	n-Butyl acrylate by National Institute for Occupational Safety & Health (NIOSH) Method 1450M	
Analyses	32 air samples including 2 field blanks, 2 media blanks, and 3 field duplicate pairs		
Samples and Matrix	07/19/2023		
Collection Date(s)	EPD-PB-BKBA-01-071923-2/ EPD-PB-BKBA-011-071923-2		
Field Duplicate Pairs	EPD-PB-WA-02-071923-2/ EPD-PB-WA-022-071923-2		
Field QC Blanks	EPD-PB-WA-05-071923-2/ EPD-PB-WA-055-071923-2		
	EPD-PB-FB-02-071923-2, EPD-PB-FB-03-071923-2, EPD-PB-MB-02-071923-2, and EPD-PB-MB-03-071923-2		

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
	Level II laboratory report does not include some required QC information; therefore, the Level IV laboratory report was used for this data validation effort.
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>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 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	Laboratory media blank (LMB IHG230721A) and laboratory reagent blank (LRB IHG230721A) 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	

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

Field duplicates:

Within Criteria	Exceedance/Notes
Y	

LCs/LCSDs:

Within Criteria	Exceedance/Notes
N	<p>The laboratory level II report and level IV report have a minor discrepancy in the relative percent difference (RPD) value (+/- 1%) for the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) due to rounding. No qualifications were applied as the RPD values in both reports are within criteria.</p> <p>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 32 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 on August 8, 2023 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.</p>

Sample dilutions:

Within Criteria	Exceedance/Notes
NA	

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

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

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	

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. B202-201

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-BKBA-011-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-BKBA-02-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-06-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-07-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-08-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-09-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-10-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-11-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-12-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-14-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-DW-D-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-FB-02-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2 U	U	2	ug	2 U	2 U
EPD-PB-FB-03-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2 U	U	2	ug	2 U	2 U
EPD-PB-MB-02-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2 U	U	2	ug	2 U	2 U
EPD-PB-MB-03-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2 U	U	2	ug	2 U	2 U
EPD-PB-OD-01-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-02-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-03-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-04-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-05-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-06-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-07-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-UW-H-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-01-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-02-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-022-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-03-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-04-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-05-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-055-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-06-071923-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 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.	2110b	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Laboratory Report No.	B202-202	by laboratory standard operating procedure (SOP) IHGC-P029	
Analyses	2-Ethylhexyl acrylate and n-Butyl acrylate		
Samples and Matrix	9 air samples including 1 field blank		
Collection Date(s)	07/19/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-071923-1		

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>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
Y	Laboratory media blank (LMB IHG230721C) and laboratory reagent blank (LRB IHG230721C) 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
N	The site-specific QAPP requires one field duplicate for every 20 field samples, but no field duplicate was submitted with these samples. While no qualifications were applied, the data user should note that field precision was not evaluated at the frequency specified in the site-specific QAPP.

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

LCs/LCSDs:

Within Criteria	Exceedance/Notes
N	The laboratory level II report and level IV report have one or more minor discrepancies in the percent recoveries (+/- 1%) and/or relative percent difference (RPD) values (+/- 1%) for the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) due to rounding. No qualifications were 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 validated EDD and attached analytical results summary.

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

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

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 ANALYTICALS, LLC REPORT NO. B202-202

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-B-071923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-DW-B-071923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-UW-F-071923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-UW-F-071923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-01-071923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-01-071923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-02-071923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	U
EPD-ST-8H-WA-02-071923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-03-071923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-03-071923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-04-071923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-04-071923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-05-071923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-05-071923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-06-071923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-06-071923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-FB-071923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U	2.8	ug	2.8	U
EPD-ST-FB-071923-1	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.	2110c	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Laboratory Report No.	B205-118	n-Butyl acrylate by National Institute for Occupational Safety and Health (NIOSH) Method 1450M	
Analyses	29 air samples including 1 field blank, 1 media blank, and 2 field duplicate pairs		
Samples and Matrix	07/21/2023		
Collection Date(s)	EPD-PB-CM-08-072123-1/EPD-PB-CM-088-072123-1		
Field Duplicate Pairs	EPD-PB-BKBA-02-072123-1/EPD-PB-BKBA-022-072123-1		
Field QC Blanks	EPD-PB-FB-01-072123-1 and EPD-PB-MB-01-072123-1		

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 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>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 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>Laboratory media blank (LMB IHG230724A) and laboratory reagent blank (LRB IHG230724A) 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.</p>

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

Field blanks:

Within Criteria	Exceedance/Notes
N	The site-specific QAPP requires one field blank per lot per 20 samples. However, of the 29 field samples, only one field blank was included in this data package. The data user should note that potential contamination due to ambient field conditions was not evaluated at the frequency specified in the site-specific QAPP. No qualifications were applied because all sample results were nondetect.

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	The site-specific QAPP describes a typical frequency of one field duplicate for every ten field samples with a minimum of one per day; however, of the 29 field samples, only two were field duplicates. While no qualifications were applied, the data user should note that field precision was not evaluated at the typical frequency described in the site-specific QAPP.

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

LCs/LCSDs:

Within Criteria	Exceedance/Notes
N	<p>The laboratory level II report and level IV report have a minor discrepancy relative percent difference (RPD) value (+/- 1%) for the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) due to rounding. No qualifications were applied.</p> <p>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 on August 8, 2023 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.</p>

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. B205-118

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-BKBA-02-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-BKBA-022-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-06-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-07-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-08-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-088-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-09-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-10-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-11-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-12-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-CM-14-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-DW-B-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-FB-01-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2 U	U	2	ug	2 U	2 U
EPD-PB-MB-01-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2 U	U	2	ug	2 U	2 U
EPD-PB-OD-01-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-02-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-03-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-04-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-05-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-06-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-OD-07-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-UW-F-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-01-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-02-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-03-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-04-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-05-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 U
EPD-PB-WA-06-072123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U	U	0.0091	ppm	0.0091 U	0.0091 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.	2110d	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Laboratory Report No.	B205-119	by laboratory standard operating procedure (SOP) IHGC-P029	
Analyses	2-Ethylhexyl acrylate and n-Butyl acrylate		
Samples and Matrix	7 air samples including 1 field blank		
Collection Date(s)	07/21/23		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-072123-1		

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>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
Y	Laboratory media blank (LMB IHG230724F) and laboratory reagent blank (LRB IHG230724F) 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
NA	The site-specific QAPP requires one field duplicate for every 20 field samples, but no field duplicate was submitted with these samples. While no qualifications were applied, the data user should note that field precision was not evaluated at the frequency specified in the site-specific QAPP.

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

LCs/LCSDs:

Within Criteria	Exceedance/Notes
N	The laboratory level II report and level IV report have one or more minor discrepancies in the percent recoveries (+/- 1%) and/or relative percent difference (RPD) values (+/- 1%) for the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) due to rounding. No qualifications were 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 validated EDD and attached analytical results summary.

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

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

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. B205-119

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-B-072123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-DW-B-072123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-UW-F-072123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-UW-F-072123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-01-072123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-01-072123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-03-072123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-03-072123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-04-072123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-04-072123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-05-072123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-05-072123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-FB-072123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U	2.8	ug	2.8	U
EPD-ST-FB-072123-1	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U	1.3	ug	1.3	U