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June 16, 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. 1881**

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting these data validation reports for sixty-seven air samples, including four field blank samples were collected at the E Palestine Site. The samples were collected on March 23-25, 2023 and were analyzed for acrylates by Eurofins Analytics, LLC at their Ashland, Virginia laboratory. The final laboratory data packages were received on May 25, 2023.

Analytical data were evaluated in general accordance with 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 this data package. The results may be used as reported by the laboratory.

If you have any questions regarding this data validation report, please feel free to contact me.

Sincerely,

Tom
Hahne

Digitally signed by
Tom Hahne
Date: 2023.06.16
12:37:17 -05'00'

Tom Hahne
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.
B086-174, B086-175, B087-169 AND B087-171**

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

Site Name	E Palestine Site - ER	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1881a	Laboratory	Eurofins Analytics, LLC, Ashland VA
Laboratory Report No.	B086-174	by laboratory standard operating procedure (SOP) IHGC-P029	
Analyses	2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029		
Samples and Matrix	Nineteen air samples, including one field blank		
Collection Date(s)	03/23/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-032323-2		

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, EPA Region 5, Revision 3 (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

OVERALL EVALUATION

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

Data completeness:

Within Criteria	Exceedance/Notes
Y	<p>The laboratory report included the following note: “The method reference, Rohm & Haas IH9805 is referenced to the AIHA certification as IHGC-P029.” The method is referred to by the abbreviation “Rohm & Haas IH9805” or “IHGC-P029.”</p> <p>Level II SDG did not have required QC forms thus a level IV package was reviewed.</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, milligram per cubic meter (mg/m³), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).</p>

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

	<p>A unique sample ID not provided for LCSD. Unique IDs are needed to keep from overwriting QC sample IDs when EDDs are uploaded to the client database. The LCSD ID (in the Samp_No and Lab_Samp_No fields) in the EDD were manually revised to match the laboratory report.</p> <p>The extraction date information in the EDD did not match the laboratory report or was blank. The project management team confirmed that this information was not needed in the EDD; therefore, all extraction date information except the field header was deleted from the EDD.</p> <p>The sample analysis time was reported as a default value of 12 AM or 00:00 hours for the LCSD in the analysis date field. The analysis date was correct. The sample analysis time for the LCSD was not required for the EDD; therefore, this value was not manually revised.</p>
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Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	None.

Method blanks:

Within Criteria	Exceedance/Notes
Y	None.

Field blanks:

Within Criteria	Exceedance/Notes
Y	None.

Surrogates and labeled compounds:

Within Criteria	Exceedance/Notes
NA	

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

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	

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 EDD and attached qualified data table.

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.

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

NF

The tentatively identified compound was manually searched for but was not found in the sample.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
 EUROFINS ANALYTICS, LLC REPORT NO. B086-174

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-B-032323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.019 U			0.019 ppm		0.019 U	
EPD-ST-8H-DW-B-032323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.013 U			0.013 ppm		0.013 U	
EPD-ST-8H-WA-03-032323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.019 U			0.019 ppm		0.019 U	
EPD-ST-8H-WA-03-032323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.013 U			0.013 ppm		0.013 U	
EPD-ST-DW-B-032323-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029 U			0.029 ppm		0.029 U	
EPD-ST-DW-B-032323-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U			0.019 ppm		0.019 U	
EPD-ST-DW-B-032323-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U			0.031 ppm		0.031 U	
EPD-ST-DW-B-032323-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U			0.021 ppm		0.021 U	
EPD-ST-FB-032323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8 U			2.8 ug		2.8 U	
EPD-ST-FB-032323-2	IHGC-P029	141-32-2	n-Butyl acrylate	1.3 U			1.3 ug		1.3 U	
EPD-ST-UW-F-032323-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U			0.031 ppm		0.031 U	
EPD-ST-UW-F-032323-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U			0.021 ppm		0.021 U	
EPD-ST-UW-F-032323-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028 U			0.028 ppm		0.028 U	
EPD-ST-UW-F-032323-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U			0.019 ppm		0.019 U	
EPD-ST-WA-01-032323-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U			0.031 ppm		0.031 U	
EPD-ST-WA-01-032323-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U			0.021 ppm		0.021 U	
EPD-ST-WA-01-032323-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03 U			0.03 ppm		0.03 U	
EPD-ST-WA-01-032323-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U			0.02 ppm		0.02 U	
EPD-ST-WA-02-032323-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U			0.031 ppm		0.031 U	
EPD-ST-WA-02-032323-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U			0.021 ppm		0.021 U	
EPD-ST-WA-02-032323-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U			0.031 ppm		0.031 U	
EPD-ST-WA-02-032323-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U			0.02 ppm		0.02 U	
EPD-ST-WA-03-032323-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.034 U			0.034 ppm		0.034 U	
EPD-ST-WA-03-032323-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.022 U			0.022 ppm		0.022 U	
EPD-ST-WA-03-032323-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U			0.031 ppm		0.031 U	
EPD-ST-WA-03-032323-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U			0.021 ppm		0.021 U	
EPD-ST-WA-04-032323-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03 U			0.03 ppm		0.03 U	
EPD-ST-WA-04-032323-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U			0.02 ppm		0.02 U	
EPD-ST-WA-04-032323-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.033 U			0.033 ppm		0.033 U	
EPD-ST-WA-04-032323-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.022 U			0.022 ppm		0.022 U	
EPD-ST-WA-05-032323-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U			0.031 ppm		0.031 U	
EPD-ST-WA-05-032323-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U			0.021 ppm		0.021 U	
EPD-ST-WA-05-032323-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U			0.031 ppm		0.031 U	

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
 EUROFINS ANALYTICS, LLC REPORT NO. B086-174

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-WA-05-032323-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-WA-06-032323-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U				0.031 ppm	0.031 U	
EPD-ST-WA-06-032323-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U				0.021 ppm	0.021 U	
EPD-ST-WA-06-032323-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U				0.031 ppm	0.031 U	
EPD-ST-WA-06-032323-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U				0.021 ppm	0.021 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.	1881b	Laboratory	Eurofins Analytics, LLC, Ashland VA
Laboratory Report No.	B086-175	2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029	
Analyses	Seventeen air samples, including one field blank		
Samples and Matrix	03/23/2023		
Collection Date(s)	None		
Field Duplicate Pairs	EPD-ST-FB-032323-1		
Field QC Blanks			

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, EPA Region 5, Revision 3 (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

OVERALL EVALUATION

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

Data completeness:

Within Criteria	Exceedance/Notes
Y	The laboratory report included the following note: “The method reference, Rohm & Haas IH9805 is referenced to the AIHA certification as IHGC-P029.” The method is referred to by the abbreviation “Rohm & Haas IH9805” or “IHGC-P029.” Samples EPD-ST-WA-01-032323-1 and EPD-ST-WA-06-032323-2 were cancelled due to pump failures. Level II SDG did not have required QC forms thus a level IV package was reviewed.

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

	<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, milligram per cubic meter (mg/m³), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).</p> <p>A unique sample ID not provided for LCSD. Unique IDs are needed to keep from overwriting QC sample IDs when EDDs are uploaded to the client database. The LCSD ID (in the Samp_No and Lab_Samp_No fields) in the EDD were manually revised to match the laboratory report.</p> <p>The extraction date information in the EDD did not match the laboratory report or was blank. The project management team confirmed that this information was not needed in the EDD; therefore, all extraction date information except the field header was deleted from the EDD.</p> <p>The sample analysis time was reported as a default value of 12 AM or 00:00 hours for the LCSD in the analysis date field. The analysis date was correct. The sample analysis time for the LCSD was not required for the EDD; therefore, this value was not manually revised.</p>
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Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	None.

Method blanks:

Within Criteria	Exceedance/Notes
Y	None.

Field blanks:

Within Criteria	Exceedance/Notes
Y	None.

**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
NA	

LCs/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 were not reported. Non-detect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the EDD and attached qualified data table.

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.



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

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.
NF	The tentatively identified compound was manually searched for but was not found in the sample.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
 EUROFINS ANALYTICS, LLC REPORT NO. B086-175

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-B-032323-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.017 U				0.017 ppm	0.017 U	
EPD-ST-8H-DW-B-032323-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.012 U				0.012 ppm	0.012 U	
EPD-ST-8H-WA-03-032323-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.019 U				0.019 ppm	0.019 U	
EPD-ST-8H-WA-03-032323-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.013 U				0.013 ppm	0.013 U	
EPD-ST-DW-B-032323-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029 U				0.029 ppm	0.029 U	
EPD-ST-DW-B-032323-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	
EPD-ST-DW-B-032323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029 U				0.029 ppm	0.029 U	
EPD-ST-DW-B-032323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-FB-032323-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8 U				2.8 ug	2.8 U	
EPD-ST-FB-032323-1	IHGC-P029	141-32-2	n-Butyl acrylate	1.3 U				1.3 ug	1.3 U	
EPD-ST-UW-F-032323-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029 U				0.029 ppm	0.029 U	
EPD-ST-UW-F-032323-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-UW-F-032323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028 U				0.028 ppm	0.028 U	
EPD-ST-UW-F-032323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	
EPD-ST-WA-01-032323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028 U				0.028 ppm	0.028 U	
EPD-ST-WA-01-032323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	
EPD-ST-WA-02-032323-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029 U				0.029 ppm	0.029 U	
EPD-ST-WA-02-032323-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	
EPD-ST-WA-02-032323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.025 U				0.025 ppm	0.025 U	
EPD-ST-WA-02-032323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.017 U				0.017 ppm	0.017 U	
EPD-ST-WA-03-032323-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03 U				0.03 ppm	0.03 U	
EPD-ST-WA-03-032323-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-WA-03-032323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029 U				0.029 ppm	0.029 U	
EPD-ST-WA-03-032323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	
EPD-ST-WA-04-032323-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.035 U				0.035 ppm	0.035 U	
EPD-ST-WA-04-032323-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.023 U				0.023 ppm	0.023 U	
EPD-ST-WA-04-032323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03 U				0.03 ppm	0.03 U	
EPD-ST-WA-04-032323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-WA-05-032323-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03 U				0.03 ppm	0.03 U	
EPD-ST-WA-05-032323-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-WA-05-032323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03 U				0.03 ppm	0.03 U	
EPD-ST-WA-05-032323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-WA-06-032323-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U				0.031 ppm	0.031 U	

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS, LLC REPORT NO. B086-175

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-WA-06-032323-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U				0.021 ppm	0.021 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.	1881c	Laboratory	Eurofins Analytics, LLC, Ashland VA
Laboratory Report No.	B087-169	by laboratory standard operating procedure (SOP) IHGC-P029	
Analyses	2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029		
Samples and Matrix	Fourteen air samples, including one field blank		
Collection Date(s)	03/25/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-032523-1		

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, EPA Region 5, Revision 3 (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

OVERALL EVALUATION

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

Data completeness:

Within Criteria	Exceedance/Notes
Y	The laboratory report included the following note: “The method reference, Rohm & Haas IH9805 is referenced to the AIHA certification as IHGC-P029.” The method is referred to by the abbreviation “Rohm & Haas IH9805” or “IHGC-P029.” Samples EPD-ST-UW-B-032523-1, EPD-ST-WA-04-032523-2, EPD-ST-8H-WA-06-032523-1, EPD-ST-DW-F-032523-2, and EPD-ST-WA-03-032523-2 were cancelled due to pump failures. Level II SDG did not have required QC forms thus a level IV package was reviewed.



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

	<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, milligram per cubic meter (mg/m³), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).</p> <p>A unique sample ID not provided for LCSD. Unique IDs are needed to keep from overwriting QC sample IDs when EDDs are uploaded to the client database. The LCSD ID (in the Samp_No and Lab_Samp_No fields) in the EDD were manually revised to match the laboratory report.</p> <p>The extraction date information in the EDD did not match the laboratory report or was blank. The project management team confirmed that this information was not needed in the EDD; therefore, all extraction date information except the field header was deleted from the EDD.</p> <p>The sample analysis time was reported as a default value of 12 AM or 00:00 hours for the LCSD in the analysis date field. The analysis date was correct. The sample analysis time for the LCSD was not required for the EDD; therefore, this value was not manually revised.</p>

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	None.

Method blanks:

Within Criteria	Exceedance/Notes
N	Batch IHG230328A: LMB IHG230328A and LRB IHG230328A detected n-butyl acrylate at levels below the reporting limit. All associated sample results were non-detect, therefore no qualifications were applied.

Field blanks:

Within Criteria	Exceedance/Notes
Y	None.

**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
NA	

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
Y	None.

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 were not reported. Non-detect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the EDD and attached qualified data table.

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.

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

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.
NF	The tentatively identified compound was manually searched for but was not found in the sample.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
 EUROFINS ANALYTICS, LLC REPORT NO. B087-169

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-F-032523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.02 U				0.02 ppm	0.02 U	0.02 U
EPD-ST-8H-DW-F-032523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.013 U				0.013 ppm	0.013 U	0.013 U
EPD-ST-DW-F-032523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029 U				0.029 ppm	0.029 U	0.029 U
EPD-ST-DW-F-032523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	0.019 U
EPD-ST-FB-032523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8 U				2.8 ug	2.8 U	2.8 U
EPD-ST-FB-032523-1	IHGC-P029	141-32-2	n-Butyl acrylate	1.3 U				1.3 ug	1.3 U	1.3 U
EPD-ST-UW-B-032523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028 U				0.028 ppm	0.028 U	0.028 U
EPD-ST-UW-B-032523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.018 U				0.018 ppm	0.018 U	0.018 U
EPD-ST-WA-01-032523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029 U				0.029 ppm	0.029 U	0.029 U
EPD-ST-WA-01-032523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	0.019 U
EPD-ST-WA-01-032523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.033 U				0.033 ppm	0.033 U	0.033 U
EPD-ST-WA-01-032523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.022 U				0.022 ppm	0.022 U	0.022 U
EPD-ST-WA-02-032523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.027 U				0.027 ppm	0.027 U	0.027 U
EPD-ST-WA-02-032523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.018 U				0.018 ppm	0.018 U	0.018 U
EPD-ST-WA-02-032523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028 U				0.028 ppm	0.028 U	0.028 U
EPD-ST-WA-02-032523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	0.019 U
EPD-ST-WA-03-032523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032 U				0.032 ppm	0.032 U	0.032 U
EPD-ST-WA-03-032523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U				0.021 ppm	0.021 U	0.021 U
EPD-ST-WA-04-032523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.026 U				0.026 ppm	0.026 U	0.026 U
EPD-ST-WA-04-032523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.017 U				0.017 ppm	0.017 U	0.017 U
EPD-ST-WA-05-032523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U				0.031 ppm	0.031 U	0.031 U
EPD-ST-WA-05-032523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U				0.021 ppm	0.021 U	0.021 U
EPD-ST-WA-05-032523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.027 U				0.027 ppm	0.027 U	0.027 U
EPD-ST-WA-05-032523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.018 U				0.018 ppm	0.018 U	0.018 U
EPD-ST-WA-06-032523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028 U				0.028 ppm	0.028 U	0.028 U
EPD-ST-WA-06-032523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	0.019 U
EPD-ST-WA-06-032523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028 U				0.028 ppm	0.028 U	0.028 U
EPD-ST-WA-06-032523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	0.019 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.	1881d	Laboratory	Eurofins Analytics, LLC, Ashland VA
Laboratory Report No.	B087-171	Analyses	
Analyses	2-Ethylhexyl acrylate and n-butyl acrylate analysis by laboratory standard operating procedure (SOP) IHGC-P029		
Samples and Matrix	Seventeen air samples, including one field blank		
Collection Date(s)	03/24/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-032423-1		

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, EPA Region 5, Revision 3 (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

OVERALL EVALUATION

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

Data completeness:

Within Criteria	Exceedance/Notes
Y	<p>The laboratory report included the following note: “The method reference, Rohm & Haas IH9805 is referenced to the AIHA certification as IHGC-P029.” The method is referred to by the abbreviation “Rohm & Haas IH9805” or “IHGC-P029.”</p> <p>Samples EPD-ST-WA-02-032423-2 and EPD-ST-WA-03-032423-1 were cancelled due to pump failures.</p> <p>Level II SDG did not have required QC forms thus a level IV package was reviewed.</p>

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

	<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, milligram per cubic meter (mg/m³), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).</p> <p>A unique sample ID not provided for LCSD. Unique IDs are needed to keep from overwriting QC sample IDs when EDDs are uploaded to the client database. The LCSD ID (in the Samp_No and Lab_Samp_No fields) in the EDD were manually revised to match the laboratory report.</p> <p>The extraction date information in the EDD did not match the laboratory report or was blank. The project management team confirmed that this information was not needed in the EDD; therefore, all extraction date information except the field header was deleted from the EDD.</p> <p>The sample analysis time was reported as a default value of 12 AM or 00:00 hours for the LCSD in the analysis date field. The analysis date was correct. The sample analysis time for the LCSD was not required for the EDD; therefore, this value was not manually revised.</p>
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Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	None.

Method blanks:

Within Criteria	Exceedance/Notes
N	Batch IHG230328A: LMB IHG230328A and LRB IHG230328A detected n-butyl acrylate at levels below the reporting limit. All associated sample results were non-detect, therefore no qualifications were applied.

Field blanks:

Within Criteria	Exceedance/Notes
Y	None.

**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
NA	

LCs/LCSDs:

Within Criteria	Exceedance/Notes
Y	None.

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 were not reported. Non-detect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the EDD and attached qualified data table.

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

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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.
NF	The tentatively identified compound was manually searched for but was not found in the sample.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
 EUROFINS ANALYTICS, LLC REPORT NO. B087-171

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-B-032423-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.017 U				0.017 ppm	0.017 U	
EPD-ST-8H-DW-B-032423-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.011 U				0.011 ppm	0.011 U	
EPD-ST-8H-WA-03-032423-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-8H-WA-03-032423-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.013 U				0.013 ppm	0.013 U	
EPD-ST-DW-B-032423-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029 U				0.029 ppm	0.029 U	
EPD-ST-DW-B-032423-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	
EPD-ST-DW-B-032423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03 U				0.03 ppm	0.03 U	
EPD-ST-DW-B-032423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-FB-032423-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8 U				2.8 ug	2.8 U	
EPD-ST-FB-032423-1	IHGC-P029	141-32-2	n-Butyl acrylate	1.3 U				1.3 ug	1.3 U	
EPD-ST-UW-F-032423-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.033 U				0.033 ppm	0.033 U	
EPD-ST-UW-F-032423-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.022 U				0.022 ppm	0.022 U	
EPD-ST-UW-F-032423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032 U				0.032 ppm	0.032 U	
EPD-ST-UW-F-032423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U				0.021 ppm	0.021 U	
EPD-ST-WA-01-032423-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028 U				0.028 ppm	0.028 U	
EPD-ST-WA-01-032423-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	
EPD-ST-WA-01-032423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U				0.031 ppm	0.031 U	
EPD-ST-WA-01-032423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U				0.021 ppm	0.021 U	
EPD-ST-WA-02-032423-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029 U				0.029 ppm	0.029 U	
EPD-ST-WA-02-032423-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	
EPD-ST-WA-03-032423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032 U				0.032 ppm	0.032 U	
EPD-ST-WA-03-032423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U				0.021 ppm	0.021 U	
EPD-ST-WA-04-032423-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.026 U				0.026 ppm	0.026 U	
EPD-ST-WA-04-032423-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.017 U				0.017 ppm	0.017 U	
EPD-ST-WA-04-032423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03 U				0.03 ppm	0.03 U	
EPD-ST-WA-04-032423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-WA-05-032423-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03 U				0.03 ppm	0.03 U	
EPD-ST-WA-05-032423-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-WA-05-032423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U				0.031 ppm	0.031 U	
EPD-ST-WA-05-032423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02 U				0.02 ppm	0.02 U	
EPD-ST-WA-06-032423-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028 U				0.028 ppm	0.028 U	
EPD-ST-WA-06-032423-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019 U				0.019 ppm	0.019 U	
EPD-ST-WA-06-032423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031 U				0.031 ppm	0.031 U	

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS, LLC REPORT NO. B087-171

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-WA-06-032423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.021 U			0.021	ppm	0.021	U