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R5_EastPalestine@epa.gov

June 27, 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 Reports
E Palestine Site - ER
EPA Contract No.: 68HE0519D0005
Task Order/Task Order Line Item No.: 68HE0520F0032/0001EB201
Document Tracking No. 1891**

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting this data validation report for seventy-four air samples, including four field blanks, that were collected at the E Palestine Site - ER. The samples were collected on April 5 and 6, 2023, and were analyzed for acrylates by Eurofins Analytics, LLC of Ashland, Virginia. The final laboratory data package was received on May 24, 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, 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).

No rejection of results was required for this data package. The results may be used as qualified based on the findings of this validation effort.

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

Sincerely,

Allison O'Neill Digitally signed by Allison O'Neill
Date: 2023.06.27 11:20:18 -0400

Allison O'Neill
Environmental Chemist

Enclosure

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

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ATTACHMENT

**DATA VALIDATION REPORTS
EUROFINS ANALYTICS REPORT NOS.
B097-153, B097-177, B100-102, AND B100-103**

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

Site Name	E Palestine Site - ER	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1891a	Laboratory	Eurofins Analytics, LLC, Ashland VA
Laboratory Report No.	B097-153	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	04/05/2023		
Collection Date(s)	None		
Field Duplicate Pairs	EPD-ST-FB-040523-2		
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 of results was required for this data package. The results may be used as qualified based on the findings of this validation effort.

Data completeness:

Within Criteria	Exceedance/Notes
Y	Level II SDG did not have any required QC forms; thus, a level IV package was reviewed. 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/m ³), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD). 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” interchangeably.

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

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	<p>Upon receipt of samples, the laboratory noted several discrepancies between sample labels and the chain of custody (COC). The Tetra Tech project manager was contacted to verify the sample IDs noted below:</p> <ul style="list-style-type: none"> • Sample EPD-ST-WA-05-040523-4 had “OWA” listed on the sample bag. The sample ID was confirmed as EPD-ST-WA-05-040523-4. • Sample EPD-ST-WA-06-040523-4 was listed as EPD-ST-WA-06-040523-04 on the sample bag. The sample ID was confirmed as EPD-ST-WA-06-040523-4. <p>The email correspondence between the laboratory and Tetra Tech was included in data package B097-177.</p>

Method blanks:

Within Criteria	Exceedance/Notes
Y	

Field blanks:

Within Criteria	Exceedance/Notes
Y	

Surrogates and labeled compounds:

Within Criteria	Exceedance/Notes
NA	

MS/MSDs:

Within Criteria	Exceedance/Notes
NA	

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

Laboratory duplicates:

Within Criteria	Exceedance/Notes
NA	

Field duplicates:

Within Criteria	Exceedance/Notes
NA	

LCs/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 EDD and attached qualified data table.

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

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

Other [Continuing calibration verification]:

Within Criteria	Exceedance/Notes
N	The continuing calibration verification (CCV) analyzed on 4/11/2023 at 4:17 had percent difference (%D) above acceptance criteria on both columns for n-butyl acrylate. The n-butyl acrylate results in all field samples were qualified as estimated (flagged UJ).

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.
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 REPORT NO. B097-153

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-WA-03-040523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015 ppm	0.015	U
EPD-ST-8H-WA-03-040523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.01	UJ
EPD-ST-DW-A-040523-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U		0.029 ppm	0.029	U
EPD-ST-DW-A-040523-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	UJ
EPD-ST-DW-A-040523-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031 ppm	0.031	U
EPD-ST-DW-A-040523-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021 ppm	0.021	UJ
EPD-ST-FB-040523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8 ug	2.8	U
EPD-ST-FB-040523-2	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U		1.3 ug	1.3	UJ
EPD-ST-UW-E-040523-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031 ppm	0.031	U
EPD-ST-UW-E-040523-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021 ppm	0.021	UJ
EPD-ST-UW-E-040523-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032	U		0.032 ppm	0.032	U
EPD-ST-UW-E-040523-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021 ppm	0.021	UJ
EPD-ST-WA-01-040523-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031 ppm	0.031	U
EPD-ST-WA-01-040523-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021 ppm	0.021	UJ
EPD-ST-WA-01-040523-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-01-040523-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	UJ
EPD-ST-WA-02-040523-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031 ppm	0.031	U
EPD-ST-WA-02-040523-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021 ppm	0.021	UJ
EPD-ST-WA-03-040523-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031 ppm	0.031	U
EPD-ST-WA-03-040523-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021 ppm	0.021	UJ
EPD-ST-WA-03-040523-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031 ppm	0.031	U
EPD-ST-WA-03-040523-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021 ppm	0.021	UJ
EPD-ST-WA-04-040523-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-04-040523-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	UJ
EPD-ST-WA-04-040523-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-04-040523-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	UJ
EPD-ST-WA-05-040523-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031 ppm	0.031	U
EPD-ST-WA-05-040523-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	UJ
EPD-ST-WA-05-040523-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031 ppm	0.031	U
EPD-ST-WA-05-040523-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	UJ
EPD-ST-WA-06-040523-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U		0.029 ppm	0.029	U
EPD-ST-WA-06-040523-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.019 ppm	0.019	UJ
EPD-ST-WA-06-040523-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032	U		0.032 ppm	0.032	U
EPD-ST-WA-06-040523-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021 ppm	0.021	UJ

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

Site Name	E Palestine Site - ER	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1891b	Laboratory	Eurofins Analytics, LLC, Ashland VA
Laboratory Report No.	B097-177	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)	04/05/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-040523-1		

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, 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>Level II SDG did not have required QC forms; thus, a level IV package was reviewed.</p> <p>The laboratory report was amended to correct the total n-butyl acrylate result in sample EPD-ST-DW-H-040523-2 from “>1.3 ug” to “<1.3 ug”.</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> <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” interchangeably.</p>

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

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	<p>Upon receipt of samples, the laboratory noted several discrepancies between sample labels and the chain of custody (COC). The Tetra Tech project manager was contacted to verify the sample IDs noted below:</p> <ul style="list-style-type: none"> • Sample EPD-ST-WA-04-1-040523-1 was listed as such on the COC but was listed as EPD-ST-WA-04-040523-1 on the sample label. The sample ID was confirmed as EPD-ST-WA-04-040523-1. • Sample EPD-ST-8H-DW-H-040423-1 was corrected to EPD-ST-8H-DW-H-040523-1. • The sample volume for sample EPD-ST-WA-05-040523-1 was incorrectly listed as 78.06L with an average flow rate of 0.31602. This volume was corrected to 13.41L and the average flow rate was corrected to 0.0543. <p>The email correspondence between the laboratory and Tetra Tech and revised COCs were included in the data package.</p>

Method blanks:

Within Criteria	Exceedance/Notes
Y	

Field blanks:

Within Criteria	Exceedance/Notes
Y	

Surrogates and labeled compounds:

Within Criteria	Exceedance/Notes
NA	

MS/MSDs:

Within Criteria	Exceedance/Notes
NA	

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

Laboratory duplicates:

Within Criteria	Exceedance/Notes
NA	

Field duplicates:

Within Criteria	Exceedance/Notes
NA	

LCs/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 EDD and attached qualified data table.

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

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

Other [none]:

Within Criteria	Exceedance/Notes
NA	

Overall Qualifications:

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

J	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.
J+	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.
J-	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.
R	The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).
UJ	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria.
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 REPORT NO. B097-177

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-H-040523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-DW-H-040523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-03-040523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	U
EPD-ST-8H-WA-03-040523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U	0.009	ppm	0.009	U
EPD-ST-DW-H-040523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U	0.029	ppm	0.029	U
EPD-ST-DW-H-040523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U	0.019	ppm	0.019	U
EPD-ST-DW-H-040523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U	0.031	ppm	0.031	U
EPD-ST-DW-H-040523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U	0.021	ppm	0.021	U
EPD-ST-FB-040523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U	2.8	ug	2.8	U
EPD-ST-FB-040523-1	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U	1.3	ug	1.3	U
EPD-ST-UW-D-040523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U	0.03	ppm	0.03	U
EPD-ST-UW-D-040523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U	0.02	ppm	0.02	U
EPD-ST-UW-D-040523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U	0.029	ppm	0.029	U
EPD-ST-UW-D-040523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U	0.019	ppm	0.019	U
EPD-ST-WA-01-040523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U	0.028	ppm	0.028	U
EPD-ST-WA-01-040523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U	0.019	ppm	0.019	U
EPD-ST-WA-01-040523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U	0.03	ppm	0.03	U
EPD-ST-WA-01-040523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U	0.02	ppm	0.02	U
EPD-ST-WA-02-040523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U	0.03	ppm	0.03	U
EPD-ST-WA-02-040523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U	0.02	ppm	0.02	U
EPD-ST-WA-02-040523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U	0.031	ppm	0.031	U
EPD-ST-WA-02-040523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U	0.02	ppm	0.02	U
EPD-ST-WA-03-040523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U	0.029	ppm	0.029	U
EPD-ST-WA-03-040523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U	0.02	ppm	0.02	U
EPD-ST-WA-03-040523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U	0.031	ppm	0.031	U
EPD-ST-WA-03-040523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U	0.021	ppm	0.021	U
EPD-ST-WA-04-040523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.033	U	0.033	ppm	0.033	U
EPD-ST-WA-04-040523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.022	U	0.022	ppm	0.022	U
EPD-ST-WA-04-040523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U	0.029	ppm	0.029	U
EPD-ST-WA-04-040523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U	0.019	ppm	0.019	U
EPD-ST-WA-05-040523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U	0.028	ppm	0.028	U
EPD-ST-WA-05-040523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U	0.019	ppm	0.019	U
EPD-ST-WA-05-040523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U	0.029	ppm	0.029	U
EPD-ST-WA-05-040523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U	0.019	ppm	0.019	U
EPD-ST-WA-06-040523-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U	0.028	ppm	0.028	U
EPD-ST-WA-06-040523-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.018	U	0.018	ppm	0.018	U
EPD-ST-WA-06-040523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U	0.03	ppm	0.03	U
EPD-ST-WA-06-040523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U	0.02	ppm	0.02	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.	1891c	Laboratory	Eurofins Analytics, LLC, Ashland VA
Laboratory Report No.	B100-102	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)	04/06/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-040623-1		

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	Level II SDG did not have any required QC forms; thus, a level IV package was reviewed. The electronic data deliverable (EDD) was amended and received on June 19, 2023, to include the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) data. 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/m ³), and parts per million (ppm) (volume) in the laboratory report and only ppm in the EDD. 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” interchangeably.

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

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	

Method blanks:

Within Criteria	Exceedance/Notes
Y	

Field blanks:

Within Criteria	Exceedance/Notes
Y	

Surrogates and labeled compounds:

Within Criteria	Exceedance/Notes
NA	

MS/MSDs:

Within Criteria	Exceedance/Notes
NA	

Laboratory duplicates:

Within Criteria	Exceedance/Notes
NA	

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

Field duplicates:

Within Criteria	Exceedance/Notes
NA	

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
Y	

Sample dilutions:

Within Criteria	Exceedance/Notes
NA	

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

MDLs/RLs:

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

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

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

Other [none]:

Within Criteria	Exceedance/Notes
N	

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.
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 REPORT NO. B100-102

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-A-040623-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.01 ppm	0.014	U
EPD-ST-8H-DW-A-040623-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U		0.01 ppm	0.009	U
EPD-ST-8H-WA-03-040623-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.01	U		0.01 ppm	0.01	U
EPD-ST-8H-WA-03-040623-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.007	U		0.01 ppm	0.007	U
EPD-ST-DW-A-040623-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U		0.03 ppm	0.028	U
EPD-ST-DW-A-040623-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.02 ppm	0.019	U
EPD-ST-DW-A-040623-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U		0.03 ppm	0.029	U
EPD-ST-DW-A-040623-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.02 ppm	0.019	U
EPD-ST-FB-040623-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8 ug	2.8	U
EPD-ST-FB-040623-1	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U		1.3 ug	1.3	U
EPD-ST-UW-E-040623-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-UW-E-040623-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-UW-E-040623-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U		0.03 ppm	0.029	U
EPD-ST-UW-E-040623-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.02 ppm	0.019	U
EPD-ST-WA-01-040623-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-WA-01-040623-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 ppm	0.021	U
EPD-ST-WA-01-040623-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.034	U		0.03 ppm	0.034	U
EPD-ST-WA-01-040623-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.023	U		0.02 ppm	0.023	U
EPD-ST-WA-02-040623-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-02-040623-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-WA-02-040623-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032	U		0.03 ppm	0.032	U
EPD-ST-WA-02-040623-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.022	U		0.02 ppm	0.022	U
EPD-ST-WA-03-040623-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-03-040623-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-WA-03-040623-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-WA-03-040623-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 ppm	0.021	U
EPD-ST-WA-04-040623-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-04-040623-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-WA-04-040623-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-WA-04-040623-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 ppm	0.021	U
EPD-ST-WA-05-040623-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032	U		0.03 ppm	0.032	U
EPD-ST-WA-05-040623-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 ppm	0.021	U
EPD-ST-WA-05-040623-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-05-040623-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-WA-06-040623-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-06-040623-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-WA-06-040623-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-WA-06-040623-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 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.	1891d	Laboratory	Eurofins Analytics, LLC, Ashland VA
Laboratory Report No.	B100-103	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)	04/06/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-040623-2		

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 was amended to correct the 2-ethylhexyl acrylate (rear section) result on EPD-ST-FB-040623-2. Level II SDG did not have any 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> <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” interchangeably.</p>

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

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	

Method blanks:

Within Criteria	Exceedance/Notes
Y	

Field blanks:

Within Criteria	Exceedance/Notes
Y	

Surrogates and labeled compounds:

Within Criteria	Exceedance/Notes
NA	

MS/MSDs:

Within Criteria	Exceedance/Notes
NA	

Laboratory duplicates:

Within Criteria	Exceedance/Notes
NA	

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

Field duplicates:

Within Criteria	Exceedance/Notes
NA	

LCs/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 EDD and attached qualified data table.

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

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

Other [none]:

Within Criteria	Exceedance/Notes
Y	

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.
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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.
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 REPORT NO. B100-103

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-C-040623-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.02 ppm	0.015	U
EPD-ST-8H-DW-C-040623-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.01	U
EPD-ST-8H-WA-04-040623-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.016	U		0.02 ppm	0.016	U
EPD-ST-8H-WA-04-040623-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.01	U
EPD-ST-DW-C-040623-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-DW-C-040623-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-DW-C-040623-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-DW-C-040623-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-FB-040623-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8 ug	2.8	U
EPD-ST-FB-040623-2	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U		1.3 ug	1.3	U
EPD-ST-UW-G-040623-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-UW-G-040623-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-UW-G-040623-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-UW-G-040623-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 ppm	0.021	U
EPD-ST-WA-01-040623-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-WA-01-040623-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 ppm	0.021	U
EPD-ST-WA-01-040623-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-01-040623-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-WA-02-040623-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032	U		0.03 ppm	0.032	U
EPD-ST-WA-02-040623-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 ppm	0.021	U
EPD-ST-WA-02-040623-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-WA-02-040623-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 ppm	0.021	U
EPD-ST-WA-03-040623-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-03-040623-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-WA-03-040623-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-03-040623-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-WA-04-040623-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-WA-04-040623-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 ppm	0.021	U
EPD-ST-WA-04-040623-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-04-040623-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-WA-05-040623-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03 ppm	0.03	U
EPD-ST-WA-05-040623-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U
EPD-ST-WA-05-040623-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-WA-05-040623-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 ppm	0.021	U
EPD-ST-WA-06-040623-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-WA-06-040623-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.02 ppm	0.021	U
EPD-ST-WA-06-040623-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.03 ppm	0.031	U
EPD-ST-WA-06-040623-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02 ppm	0.02	U