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September 1, 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. 1996**

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting this data validation report for sixty air samples including seven field blanks and five field duplicate samples collected at the E Palestine site. The samples were collected on June 10 and 11, 2023, and were analyzed for acrylates by Eurofins Analytics, LLC. The final laboratory data package was received on June 22, 2023.

Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, East Palestine Train Derailment Site, East Palestine, Columbiana County, Ohio, Revision 3 (April 2023)*, the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4 (August 2022)*, and the *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (November 2020)*.

No rejection of results was required for these data packages. The results may be used as 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 via the project manager.

Sincerely,

Deb Kutsal Digitally signed by Deb Kutsal
Date: 2023.09.01 12:15:25
-07'00'

Environmental Chemist

Enclosure

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

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ATTACHMENT

**DATA VALIDATION REPORT
EUROFINS ANALYTICS, LLC REPORT NOS. B164-167, B164-168,
B164-169, AND B164-170**

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

Site Name	E Palestine Site - ER	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1996a		
Laboratory Report No.	B164-167	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Analyses	2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029		
Samples and Matrix	Nine air samples including one field blank and one field duplicate pair		
Collection Date(s)	June 11, 2023		
Field Duplicate Pairs	EPD-ST-8H-WA-33-061123-2/EPD-ST-8H-WA-03-061123-2		
Field QC Blanks	EPD-ST-FB-061123-2		

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), 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
N	<p>Sample EPD-ST-8H-WA-06-061123-2 is listed on the chain-of-custody (COC) form but was not submitted for analysis due to pump failure. The COC form was amended to include the total time and volume for sample EPD-ST-8H-WA-33-061123-2, which had been omitted.</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>

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

Data completeness (continued):

Within Criteria	Exceedance/Notes
N	<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 sample analysis time was reported as a default value of 12 AM or 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. The analysis date was correct. The sample analysis time for the LCSD is not required for the validated EDD; therefore, this value was not manually revised.</p>

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	

**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
Y	

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
N	<p>The recoveries of 2-ethylhexyl acrylate in the LCS and LCSD were above the laboratory control limits. The sample results are nondetect and were therefore not qualified.</p> <p>The laboratory report and EDD have one or more minor discrepancies in the LCS/LCSD results (+/- 1 ug) and/or percent recoveries (+/- 1%) that were verified with the laboratory to be a significant figure discrepancies. No qualifications were applied.</p>

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	

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

Overall Qualifications:

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

J	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.
J+	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.
J-	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.
R	The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).
UJ	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS, LLC REPORT NO. B164-167

Sample ID	Method	CAS No.	Analyte	Lab_Result	Lab_Qual	RL	Units	Val_Result	Val_Qual
EPD-ST-8H-DW-A-061123-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-DW-A-061123-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-UW-E-061123-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	U
EPD-ST-8H-UW-E-061123-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-01-061123-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-01-061123-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-02-061123-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-02-061123-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-03-061123-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-03-061123-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-33-061123-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	U
EPD-ST-8H-WA-33-061123-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-04-061123-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.016	U	0.016	ppm	0.016	U
EPD-ST-8H-WA-04-061123-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.011	U	0.011	ppm	0.011	U
EPD-ST-8H-WA-05-061123-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	U
EPD-ST-8H-WA-05-061123-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-FB-061123-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U	2.8	ug	2.8	U
EPD-ST-FB-061123-2	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U	1.3	ug	1.3	U

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

Site Name	E Palestine Site - ER	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1996b		
Laboratory Report No.	B164-168	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Analyses	2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029		
Samples and Matrix	Ten air samples including one field blank and one field duplicate sample		
Collection Date(s)	June 10, 2023		
Field Duplicate Pairs	EPD-ST-8H-WA-22-061023-2/EPD-ST-8H-WA-02-061023-2		
Field QC Blanks	EPD-ST-FB-061023-2		

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), 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 this validation effort.

Data completeness:

Within Criteria	Exceedance/Notes
N	<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 sample analysis time was reported as a default value of 12 AM or 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. The analysis date was correct. The sample analysis time for the LCSD is not required for the validated EDD; therefore, this value was not manually revised.</p>

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

Data completeness (continued):

Within Criteria	Exceedance/Notes
	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

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	The site-specific QAPP sample preparation holding time was exceeded. The samples were collected on June 10 but weren't prepared until June 19, which is two days past the 7-day holding time for preparation. The non-detect sample results were qualified as estimated, possibly biased low (flagged UJ).

Method blanks:

Within Criteria	Exceedance/Notes
Y	

Field blanks:

Within Criteria	Exceedance/Notes
Y	

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
Y	

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.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS, LLC REPORT NO. B164-168

Sample ID	Method	Cas. No.	Analyte	Lab_Result	Lab_Qual	RL	Units	Val_Result	Val_Qual
EPD-ST-8H-DW-C-061023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	UJ
EPD-ST-8H-DW-C-061023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-UW-G-061023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	UJ
EPD-ST-8H-UW-G-061023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-01-061023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	UJ
EPD-ST-8H-WA-01-061023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-02-061023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	UJ
EPD-ST-8H-WA-02-061023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-22-061023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	UJ
EPD-ST-8H-WA-22-061023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-03-061023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	UJ
EPD-ST-8H-WA-03-061023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-04-061023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	UJ
EPD-ST-8H-WA-04-061023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-05-061023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	UJ
EPD-ST-8H-WA-05-061023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-06-061023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	UJ
EPD-ST-8H-WA-06-061023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-FB-061023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U	2.8	ug	2.8	UJ
EPD-ST-FB-061023-2	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U	1.3	ug	1.3	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.	1996c		
Laboratory Report No.	B164-169	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Analyses	2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029		
Samples and Matrix	Nine air samples including one field blank		
Collection Date(s)	June 11, 2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-061123-1		

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), 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 this validation effort.

Data completeness:

Within Criteria	Exceedance/Notes
N	<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 sample analysis time was reported as a default value of 12 AM or 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. The analysis date was correct. The sample analysis time for the LCSD is not required for the validated EDD; therefore, this value was not manually revised.</p>

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

Data completeness (continued):

Within Criteria	Exceedance/Notes
	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.

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	The site-specific QAPP sample preparation holding time was exceeded. The samples were collected on June 11 but weren’t prepared until June 19, which is one day past the 7-day holding time for preparation. The non-detect sample results were qualified as estimated, possibly biased low (flagged UJ).

Method blanks:

Within Criteria	Exceedance/Notes
Y	

Field blanks:

Within Criteria	Exceedance/Notes
Y	

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.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS REPORT NO. B164-169

Sample ID	Method	CAS No.	Analyte	Lab_Result	Lab_Qual	RL	Units	Val_Result	Val_Qual
EPD-ST-8H-DW-C-061123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	UJ
EPD-ST-8H-DW-C-061123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-UW-G-061123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	UJ
EPD-ST-8H-UW-G-061123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-01-061123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	UJ
EPD-ST-8H-WA-01-061123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-02-061123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	UJ
EPD-ST-8H-WA-02-061123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-03-061123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	UJ
EPD-ST-8H-WA-03-061123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-04-061123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	UJ
EPD-ST-8H-WA-04-061123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U	0.009	ppm	0.009	UJ
EPD-ST-8H-WA-05-061123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	UJ
EPD-ST-8H-WA-05-061123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-8H-WA-06-061123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	UJ
EPD-ST-8H-WA-06-061123-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	UJ
EPD-ST-FB-061123-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U	2.8	ug	2.8	UJ
EPD-ST-FB-061123-1	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U	1.3	ug	1.3	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.	1996d		
Laboratory Report No.	B164-170	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Analyses	n-Butyl acrylate by NIOSH Method 1450M		
Samples and Matrix	Thirty-two air samples including four field blanks and three field duplicate pairs		
Collection Date(s)	June 11, 2023		
Field Duplicate Pairs	EPD-PB-CM-111-061123-2/EPD-PB-CM-11-061123-2 EPD-PB-OD-022-061123-2/EPD-PB-OD-02-061123-2 EPD-PB-WA-055-061123-2/EPD-PB-WA-05-061123-2		
Field QC Blanks	EPD-PB-FB-02-061123-2, EPD-PB-FB-03-061123-2, EPD-PB-MB-02-061123-2, and EPD-PB-MB-03-061123-2		

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), 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
N	<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 sample analysis time was reported as a default value of 12 AM or 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. The analysis date was correct. The sample analysis time for the LCSD is not required for the validated EDD; therefore, this value was not manually revised.</p>

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

Data completeness (continued):

Within Criteria	Exceedance/Notes
	<p>The site-specific QAPP for passive badges specifies one laboratory blank, one LCS, and one LCS duplicate (LCSD) should be prepared per batch of 20 field samples. However, results for only one of each type of QC sample is reported for this batch of 32 field samples. The laboratory was contacted and directed to follow the QC sample frequencies in the site-specific QAPP. No qualifications were applied because the LCS and LCSD results met the QAPP acceptance criteria, and the LCSs and LCSDs for the previous data sets have met the site-specific control criteria.</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>

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	

**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
Y	

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
Y	

Sample dilutions:

Within Criteria	Exceedance/Notes
NA	

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

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

MDLs/RLs:

Within Criteria	Exceedance/Notes
Y	Method detection limits 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	

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

Overall Qualifications:

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

J	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.
J+	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.
J-	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.
R	The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).
UJ	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS, LLC REPORT NO. B164-170

Sample ID	Method	CAS No.	Analyte	Lab_Result	Lab_Qual	RL	Units	Val_Result	Val_Qual
EPD-PB-BKBA-01-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-BKBA-02-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-06-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-07-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-08-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-09-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-10-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-11-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-111-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-12-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-14-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-DW-A-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-01-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-02-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-022-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-03-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-04-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-05-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-06-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-07-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-UW-E-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-01-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-02-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-03-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-04-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-05-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-055-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-06-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-FB-02-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U	2	ug	2	U
EPD-PB-FB-03-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U	2	ug	2	U
EPD-PB-MB-02-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U	2	ug	2	U
EPD-PB-MB-03-061123-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U	2	ug	2	U