DRAFT Table
PRELIMINARY Analytical Results for Surface Water Samples
East Palestine Derailment Emergency Response Site
East Palestine, Columbiana County, Ohio

Analyte	CAS Number	Ohio River Basin Human Health - Nondrink Criteria	Units	Sample ID:		
				EPD-SW-01-01-020423	EPD-SW-02-01-020423	EPD-SW-03-01-020423
				2/4/2023 13:45	2/4/2023 12:00	2/4/2023 15:40
VOCs (µg/L)						
1,1,1-Trichloroethane	71-55-6	200	µg/L	0.46 U	46 U	46 U
1,1,2,2-Tetrachloroethane	79-34-5	1.7	µg/L	0.4 U	40 U	40 U
1,1,2-Trichloroethane	79-00-5	5	µg/L	0.46 U	46 U	46 U
1,1,2-Trichlorotrifluoroethane	76-13-1	NE	µg/L	0.52 U	52 U	52 U
1,1-Dichloroethane	75-34-3	NE	µg/L	0.44 U	44 U	44 U
1,1-Dichloroethene	75-35-4	0.57	µg/L	0.4 U	40 U	40 U
1,2,3-Trichlorobenzene	87-61-6	NE	µg/L	0.42 U	42 U	42 U
1,2,3-Trichloropropane	96-18-4	NE	µg/L	0.4 U	40 U	40 U
1,2,4-Trichlorobenzene	120-82-1	0.71	µg/L	0.45 U	45 U	45 U
1,2,4-Trimethylbenzene	95-63-6	NE	µg/L	0.45 U	45 U	45 U
1,2-Dibromo-3-chloropropane	96-12-8	NE	µg/L	0.43 U	43 U	43 U
1,2-Dibromoethane	106-93-4	NE	µg/L	0.41 U	41 U	41 U
1,2-Dichlorobenzene	95-50-1	420	µg/L	0.32 U	32 U	32 U
1,2-Dichloroethane	107-06-2	3.8	µg/L	0.44 U	44 U	44 U
1,2-Dichloropropane	78-87-5	5	µg/L	0.48 U	48 U	48 U
1,3,5-Trimethylbenzene	108-67-8	450	µg/L	0.65 U	65 U	65 U
1,3-Dichlorobenzene	541-73-1	7.0	µg/L	0.33 U	33 U	33 U
1,4-Dichlorobenzene	106-46-7	63	µg/L	0.35 U	35 U	35 U
2-Butanone	78-93-3	NE	µg/L	0.52 U	52 U	52 U
2-Hexanone	591-78-6	NE	µg/L	0.59 U	59 U	59 U
4-Methyl-2-pentanone	108-10-1	NE	µg/L	0.52 U	52 U	52 U
Acetone	67-64-1	NE	µg/L	1.1 U	110 U	110 U
Benzene	71-43-2	5	µg/L	0.46 U	46 U	46 U
Bromochloromethane	74-97-5	NE	µg/L	0.45 U	45 U	45 U
Bromodichloromethane	75-27-4	5.5	µg/L	0.49 U	49 U	49 U
Bromoform	75-25-2	43	µg/L	0.56 U	56 U	56 U
Bromomethane	74-83-9	NE	µg/L	0.9 U	90 U	90 U
Carbon disulfide	75-15-0	NE	µg/L	0.49 U	49 U	49 U
Carbon tetrachloride	56-23-5	2.3	µg/L	0.4 U	40 U	40 U
Chlorobenzene	108-90-7	100	µg/L	0.4 U	40 U	40 U
Chloroethane	75-00-3	NE	µg/L	0.68 U	68 U	68 U
Chloroform	67-66-3	57	µg/L	0.46 U	46 U	46 U
Chloromethane	74-87-3	NE	µg/L	0.83 U	83 U	83 U
cis-1,2-Dichloroethene	156-59-2	70	µg/L	0.42 U	42 U	42 U
cis-1,3-Dichloropropene	10061-01-5	NE	µg/L	0.57 U	57 U	57 U
Cyclohexane	110-82-7	NE	µg/L	0.63 U	63 U	63 U
Dibromochloromethane	124-48-1	NE	µg/L	0.4 U	40 U	40 U
Ethylbenzene	100-41-4	68	µg/L	0.34 U	34 U	34 U
Isopropylbenzene	98-82-8	NE	µg/L	0.35 U	35 U	35 U
m,p-Xylene	179601-23-1	NE	µg/L	0.81 U	81 U	81 U
Methyl acetate	79-20-9	NE	µg/L	0.59 U	59 U	59 U
Methyl tert-butyl ether	1634-04-4	NE	µg/L	0.45 U	45 U	45 U
Methylcyclohexane	108-87-2	NE	µg/L	0.35 U	35 U	35 U
Methylene chloride	75-09-2	NE	µg/L	0.86 U	86 U	86 U
o-Xylene	95-47-6	NE	µg/L	0.31 U	31 U	31 U
Styrene	100-42-5	100	µg/L	0.33 U	33 U	33 U
Tetrachloroethene	127-18-4	5	µg/L	0.39 U	39 U	39 U
Toluene	108-88-3	57	µg/L	0.45 U	45 U	45 U
trans-1,2-Dichloroethene	156-60-5	100	µg/L	0.48 U	48 U	48 U
trans-1,3-Dichloropropene	10061-02-6	NE	µg/L	0.38 U	38 U	38 U
Trichloroethene	79-01-6	5	µg/L	0.43 U	43 U	43 U
Trichlorofluoromethane	75-69-4	NE	µg/L	0.52 U	52 U	52 U
Vinyl chloride	75-01-4	0.22	µg/L	0.53 U	53 U	53 U
Xylenes, Total	1330-20-7	10000	µg/L	0.81 U	81 U	81 U
1,1-Dichloropropene	563-58-6	NE	µg/L	0.37 U	37 U	37 U
Dibromodifluoromethane	75-61-6	NE	µg/L	0.46 U	46 U	46 U
SVOCs (µg/L)						
1,1`-Biphenyl	92-52-4	NE	µg/L	0.5 U	25 U	0.49 U
1,2,4,5-Tetrachlorobenzene	95-94-3	0.03	µg/L	0.4 U	21 U	0.39 U
1,4-Dioxane	123-91-1	32	µg/L	0.85 U	44 U	**1.1 J**
1-Methylnaphthalene	90-12-0	NE	µg/L	0.098 U	5 U	**0.46**
2,2`-Oxybis(1-chloropropane)	108-60-1	1,400	µg/L	0.27 U	14 U	0.27 U
2,3,4,6-Tetrachlorophenol	58-90-2	NE	µg/L	0.53 U	27 U	0.52 U

See notes on last page.

DRAFT Table
PRELIMINARY Analytical Results for Surface Water Samples
East Palestine Derailment Emergency Response Site
East Palestine, Columbiana County, Ohio

Analyte	CAS Number	Ohio River Basin Human Health - Nondrink Criteria	Units	Sample ID:		
				EPD-SW-01-01-020423	EPD-SW-02-01-020423	EPD-SW-03-01-020423
				2/4/2023 13:45	2/4/2023 12:00	2/4/2023 15:40
2,4,5-Trichlorophenol	95-95-4	300	µg/L	0.2 U	10 U	0.2 U
2,4,6-Trichlorophenol	88-06-2	14	µg/L	0.3 U	15 U	0.29 U
2,4-Dichlorophenol	120-83-2	0.3	µg/L	0.41 U	21 U	0.4 U
2,4-Dimethylphenol	105-67-9	100	µg/L	0.42 U	22 U	0.42 U
2,4-Dinitrophenol	51-28-5	10	µg/L	3.1 U	160 U	3 U
2,4-Dinitrotoluene	121-14-2	0.49	µg/L	0.5 U	25 U	0.49 U
2,6-Dinitrotoluene	606-20-2	NE	µg/L	0.39 U	20 U	0.38 U
2-Chloronaphthalene	91-58-7	800	µg/L	0.089 U	4.5 U	0.087 U
2-Chlorophenol	95-57-8	0.1	µg/L	0.27 U	14 U	0.27 U
2-Methylnaphthalene	91-57-6	NE	µg/L	0.077 U	3.9 U	**0.82**
2-Methylphenol	95-48-7	NE	µg/L	0.3 U	15 U	0.29 U
2-Nitroaniline	88-74-4	NE	µg/L	0.25 U	13 U	0.24 U
2-Nitrophenol	88-75-5	NE	µg/L	0.4 U	21 U	0.39 U
3&4-Methylphenol	84989-04-8	NE	µg/L	0.25 U	13 U	0.24 U
3,3´-Dichlorobenzidine	91-94-1	0.21	µg/L	0.54 U	28 U	0.53 U
3-Nitroaniline	99-09-2	NE	µg/L	0.76 U	39 U	0.74 U
4,6-Dinitro-2-methylphenol	534-52-1	NE	µg/L	0.32 U	16 U	0.31 U
4-Bromophenyl phenyl ether	101-55-3	NE	µg/L	0.39 U	20 U	0.38 U
4-Chloro-3-methylphenol	59-50-7	500	µg/L	0.31 U	16 U	0.3 U
4-Chloroaniline	106-47-8	NE	µg/L	0.4 U	21 U	0.39 U
4-Chlorophenyl phenyl ether	7005-72-3	NE	µg/L	0.37 U	19 U	0.36 U
4-Nitroaniline	100-01-6	NE	µg/L	0.67 U	34 U	0.66 U
4-Nitrophenol	100-02-7	NE	µg/L	0.28 U	15 U	0.28 U
Acenaphthene	83-32-9	70	µg/L	0.096 U	4.9 U	**0.87**
Acenaphthylene	208-96-8	NE	µg/L	0.089 U	4.5 U	**1**
Acetophenone	98-86-2	NE	µg/L	0.44 U	22 U	0.43 U
Anthracene	120-12-7	300	µg/L	0.033 U	**3.6 J**	**0.74**
Atrazine	1912-24-9	3	µg/L	0.41 U	21 U	0.4 U
Benzaldehyde	100-52-7	NE	µg/L	0.61 U	31 U	0.6 U
Benzo(a)anthracene	56-55-3	0.012	µg/L	0.12 U	6 U	**0.68**
Benzo(a)pyrene	50-32-8	0.0012	µg/L	0.052 U	2.7 U	0.051 U
Benzo(b)fluoranthene	205-99-2	0.012	µg/L	0.06 U	3.1 U	0.059 U
Benzo(g,h,i)perylene	191-24-2	NE	µg/L	0.11 U	5.4 U	0.1 U
Benzo(k)fluoranthene	207-08-9	0.038	µg/L	0.057 U	2.9 U	0.056 U
Bis(2-chloroethoxy)methane	111-91-1	NE	µg/L	0.34 U	18 U	0.34 U
Bis(2-chloroethyl)ether	111-44-4	0.3	µg/L	0.44 U	22 U	0.43 U
Bis(2-chloroisopropyl)ether	108-60-1	1,400	µg/L	0.27 U	14 U	0.27 U
Bis(2-ethylhexyl)phthalate	117-81-7	3.2	µg/L	0.47 U	24 U	0.46 U
Butyl benzyl phthalate	85-68-7	0.10	µg/L	0.35 U	18 U	0.35 U
Caprolactam	105-60-2	NE	µg/L	1.1 U	58 U	1.1 U
Carbazole	86-74-8	NE	µg/L	0.28 U	15 U	0.28 U
Chrysene	218-01-9	0.038	µg/L	0.057 U	2.9 U	**0.74**
Dibenzo(a,h)anthracene	53-70-3	0.0012	µg/L	0.086 U	4.4 U	0.084 U
Dibenzofuran	132-64-9	NE	µg/L	0.27 U	14 U	**0.66 J**
Diethyl phthalate	84-66-2	600	µg/L	0.2 U	10 U	0.2 U
Dimethyl phthalate	131-11-3	2,000	µg/L	0.21 U	11 U	0.21 U
Di-n-butyl phthalate	84-74-2	20	µg/L	0.25 U	13 U	0.24 U
Di-n-octyl phthalate	117-84-0	NE	µg/L	0.63 U	32 U	0.61 U
Fluoranthene	206-44-0	20	µg/L	0.045 U	**9.1**	**2.7**
Fluorene	86-73-7	50	µg/L	0.06 U	**4.8 J**	**1**
Hexachlorobenzene	118-74-1	0.00079	µg/L	0.52 U	27 U	0.51 U
Hexachlorobutadiene	87-68-3	0.1	µg/L	0.74 U	38 U	0.73 U
Hexachlorocyclopentadiene	77-47-4	4.0	µg/L	1.3 U	66 U	1.3 U
Hexachloroethane	67-72-1	1	µg/L	0.73 U	37 U	0.72 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.012	µg/L	0.079 U	4 U	0.078 U
Isophorone	78-59-1	340	µg/L	0.4 U	21 U	0.39 U
Naphthalene	91-20-3	NE	µg/L	0.079 U	**7.9**	0.078 U
Nitrobenzene	98-95-3	10	µg/L	0.31 U	16 U	0.3 U
N-Nitrosodi-n-propylamine	621-64-7	0.05	µg/L	0.41 U	21 U	0.4 U
N-Nitrosodiphenylamine	86-30-6	33	µg/L	0.58 U	30 U	0.57 U
Pentachlorophenol	87-86-5	0.3	µg/L	1.1 U	59 U	1.1 U
Phenanthrene	85-01-8	NE	µg/L	0.096 U	**10**	**3.1**
Phenol	108-95-2	1	µg/L	0.25 U	**20 J**	0.24 U
Pyrene	129-00-0	20	µg/L	0.042 U	**7.3**	**2.2**

See notes on last page.

DRAFT Table
PRELIMINARY Analytical Results for Surface Water Samples
East Palestine Derailment Emergency Response Site
East Palestine, Columbiana County, Ohio

Analyte	CAS Number	Ohio River Basin Human Health - Nondrink Criteria	Units	Sample ID:		
				EPD-SW-01-01-020423	EPD-SW-02-01-020423	EPD-SW-03-01-020423
				2/4/2023 13:45	2/4/2023 12:00	2/4/2023 15:40
Pyridine	110-86-1	NE	µg/L	0.67 U	34 U	0.66 U
Petroleum Products (µg/L)						
DRO (C10-C28)	DROC10C28	NE	mg/L	**1.2**	**190 E**	**300 E**
ORO (C28-C40)	OROC28C40	NE	mg/L	**27 E**	**300 E**	**290 E**
GRO (C6-C10)	GROC6C10	NE	mg/L	76 U	**59000**	**130000**
pH						
pH (laboratory)	PH	NE	µg/L	**8.3 H**	**7.59 H**	**8.11 H**

Notes:
= result greater than Ohio River Basin Human Health - Nondrink Criteria
= result greater than Michigan Surface Water Criteria
Bolded value = analyte was detected

Laboratory Result Qualifiers (analytical data have not yet been validated and should be considered **preliminary**):
J- = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL, biased low.
J+ = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL, biased high.

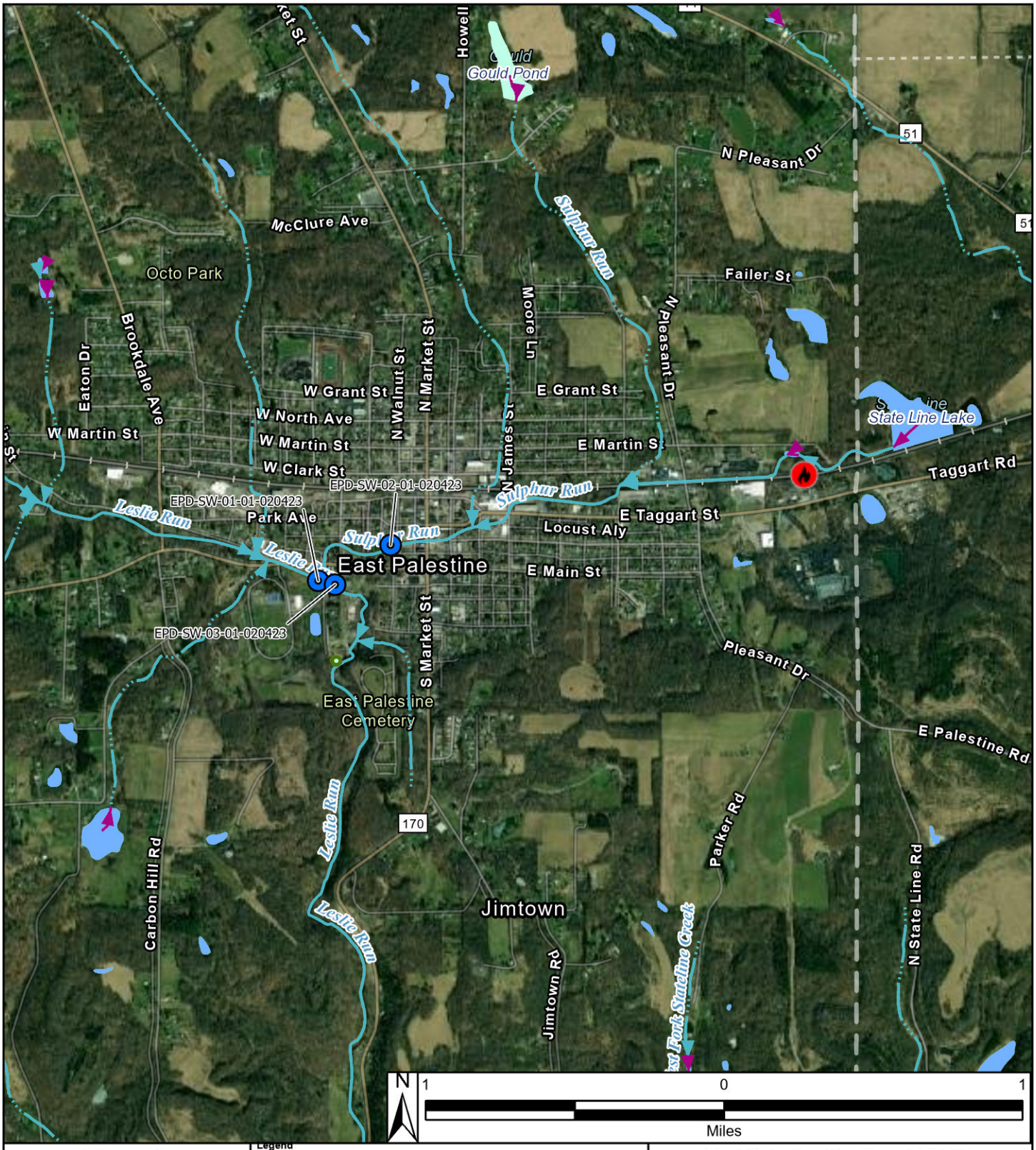
E = Value above quantitation range
H = Analyzed outside of Holding Time
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL
U = Analyte was not detected

UJ = Analyte was not detected, the result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

-- = Not Analyzed
ug/L = micrograms per liter
EPA = U. S. Environmental Protection Agency
HQ = Hazard Quotient
MCL = Maximum Contaminant Level
ng/L = nanograms per liter
DRO = Diesel range organic compounds
GRO = Gasoline range organic compounds
NE = Not Established
MDL = Method Detection Limit
MRL = Method Reporting Limit
NE = Not Established
RSL = Regional Screening Level
TCR = Target Cancer Risk
PFAS = Per- and polyfluoroalkyl substances
ORO = Oil range organics
SVOCs = Semivolatile organic compounds
VOCs = Volatile organic compounds

EPA Regional Screening Levels (RSLs) TCR 1E-06 and HQ 1.0 Generic Tables as of May 2022: https://www.epa.gov/risk/regional-screening-levels-rsls-
Ohio River Basin Aquatic Life and Human Health Criteria per Chapter 3745-1 of the Ohio Administrative Code (OAC).

See notes on last page.



Reference Map

Legend

- Surface Water Sample Locations
- Derailment Location
- Dam/Weir
- Other
- Point Event
- Line
- Tunnel
- Connector
- CanalDitch
- Underground Conduit
- StreamRiver
- StreamRiver - Perennial
- StreamRiver - Intermittent
- StreamRiver - Ephemeral
- Pipeline
- Artificial Path
- Perennial
- Intermittent
- Ephemeral
- Artificial Path
- Canal Ditch
- Coastline
- Connector
- Pipeline

East Palestine Derailment ER Site
75 E Main St
East Palestine, Columbiana County, OH 44413

Figure 1
Surface Water Sample Locations

TETRA TECH

Prepared For: EPA	Prepared By: Tetra Tech Inc.

Date Saved: 2/9/2023