EAST PALESTINE, OHIO TRAIN DERAILMENT

Ohio River Valley Water Sanitation Commission (ORSANCO)

EAST PALESTINE DERAILMENT PRESENTATION & DISCUSSION

1) Incident & Response Overview
2) Data Overview & Analytical Discussion
3) Challenges & Lessons Learned
4) Questions & Discussion

INCIDENT OVERVIEW & RESPONSE

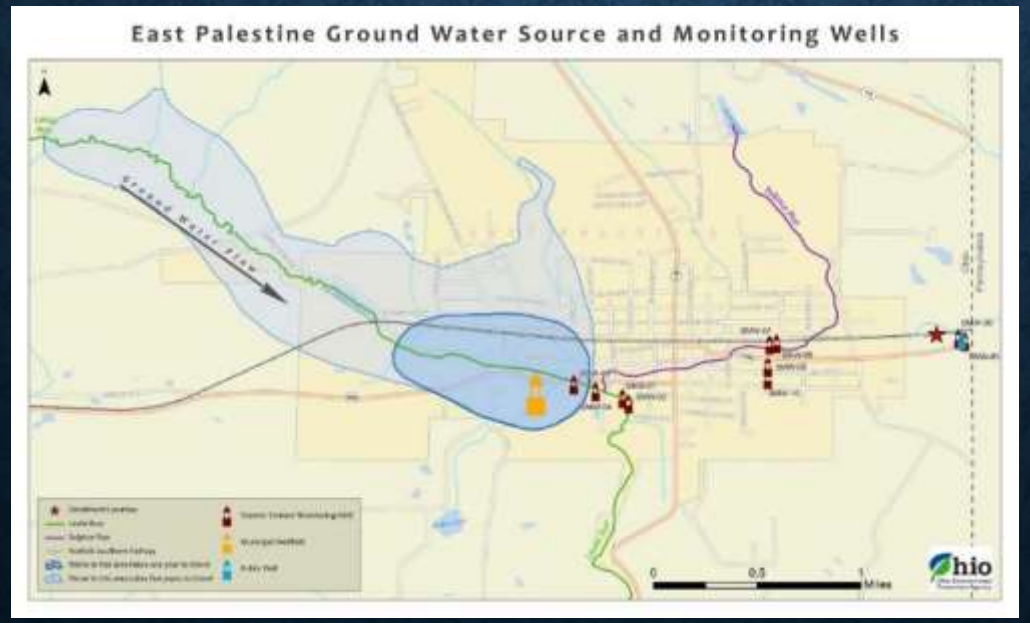
East Palestine Train Derailment

TIMELINE OF EAST PALESTINE TRAIN DERAILMENT RESPONSE

Feb 3, 2023 – Train derails in East Palestine, OH at 20:55

- 50 cars derailed (10 haz mat tankers)

- NRC report received 23:12 indicating derailed cars on fire
  - Potential release of unknown materials



Melissa Smith via AP

TIMELINE OF EAST PALESTINE TRAIN DERAILMENT RESPONSE

Feb 4, 2023 –

- Fire ongoing, but reduced
- 5 vinyl chloride tankers derailed (at least 2 engulfed)
- Other hazmat railcars also burned
- Unknown materials/quantities released
- Sulphur Run to Leslie Run impacted by runoff
- Fish kill observed
- Incident location is 19 stream miles to the Ohio River
- Enters Ohio River at ORM 39.6

Melissa Smith via AP

- ORSANCO notified water utilities from East Liverpool, OH to Weirton, WV
  - Spill report emailed to distribution list

TIMELINE OF EAST PALESTINE TRAIN DERAILMENT RESPONSE

Feb 5, 2023 –

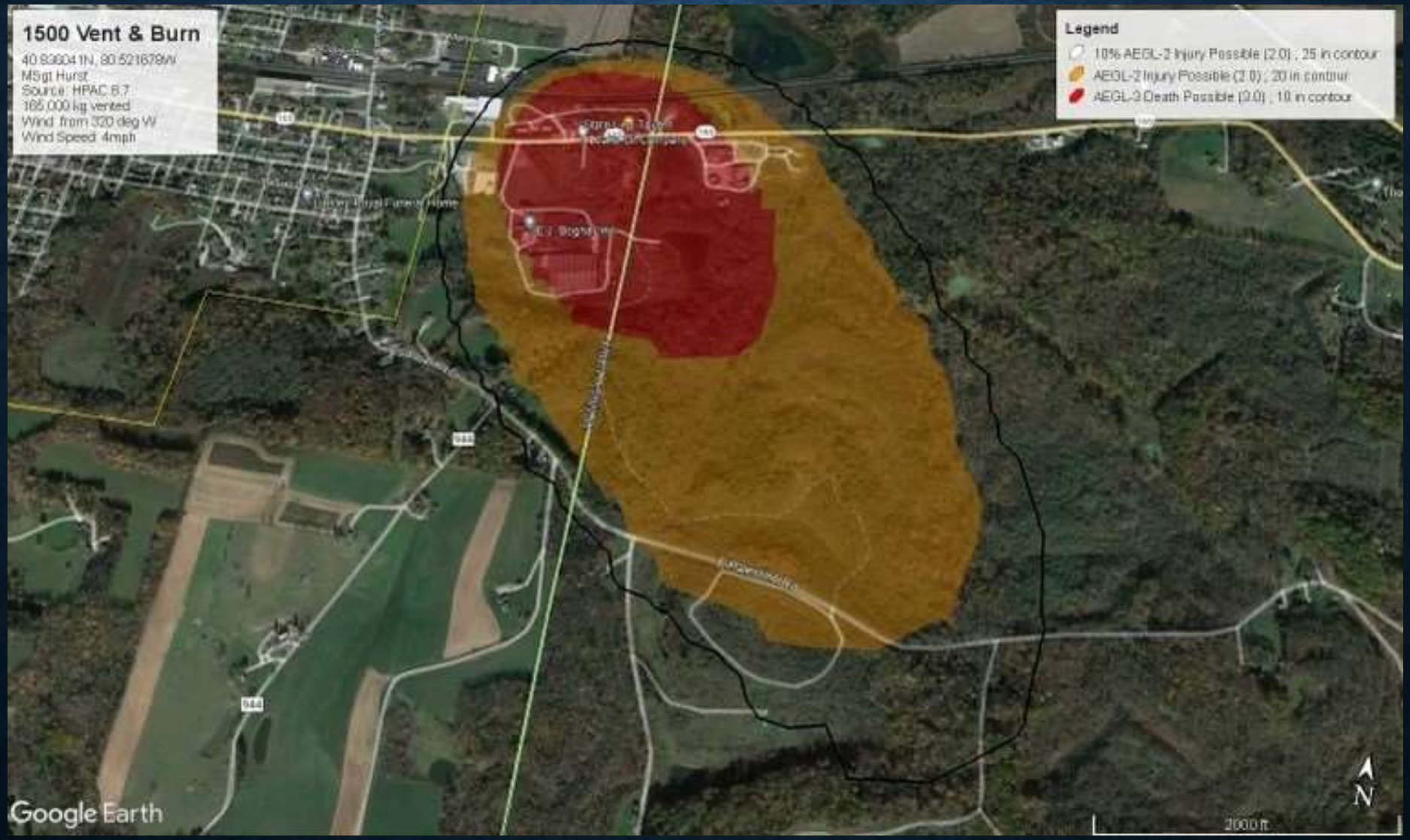
- Pressure buildup noted in vinyl chloride railcar due to damaged relief valve
- EPA/RP conducting water sampling in creeks
- Press conference indicates material contained and none has reached Little Beaver Creek

Feb 6, 2023

- Products being transported reported to include:
  - Vinyl chloride
  - Butyl acrylate
  - Benzene residue
  - Combustible liquids
- Volumes released unknown
- OEPA reports some butyl acrylate released into the creek and escaped containment
- Weirton, WV ODS station running samples every 2 hours

Gene J. Puskar / AP

EVACUATION ZONES FOR CONTROLLED RELEASE



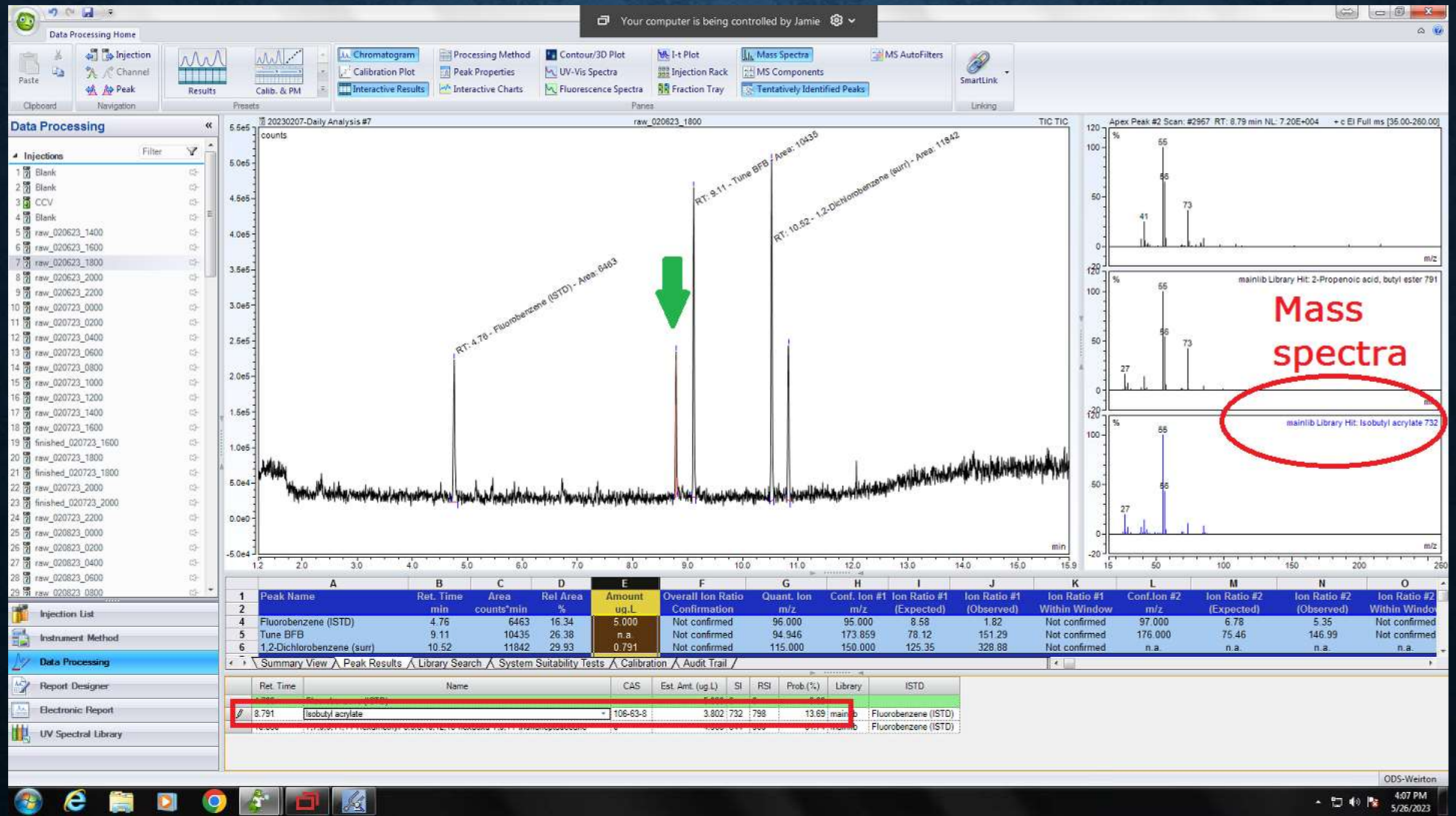
TIMELINE OF EAST PALESTINE TRAIN DERAILMENT RESPONSE

Feb 7, 2023 –

- ORSANCO briefs Technical Committee
  - No detections at that time
  - Shortly thereafter first detection observed
- Butyl acrylate detected at Weirton in sample collected at 1600 on Feb 6
- All surface water utilities from East Liverpool, OH to Wheeling, WV notified by phone of detections
- ORSANCO water quality field crew mobilized

EPA Feb 7, 2023

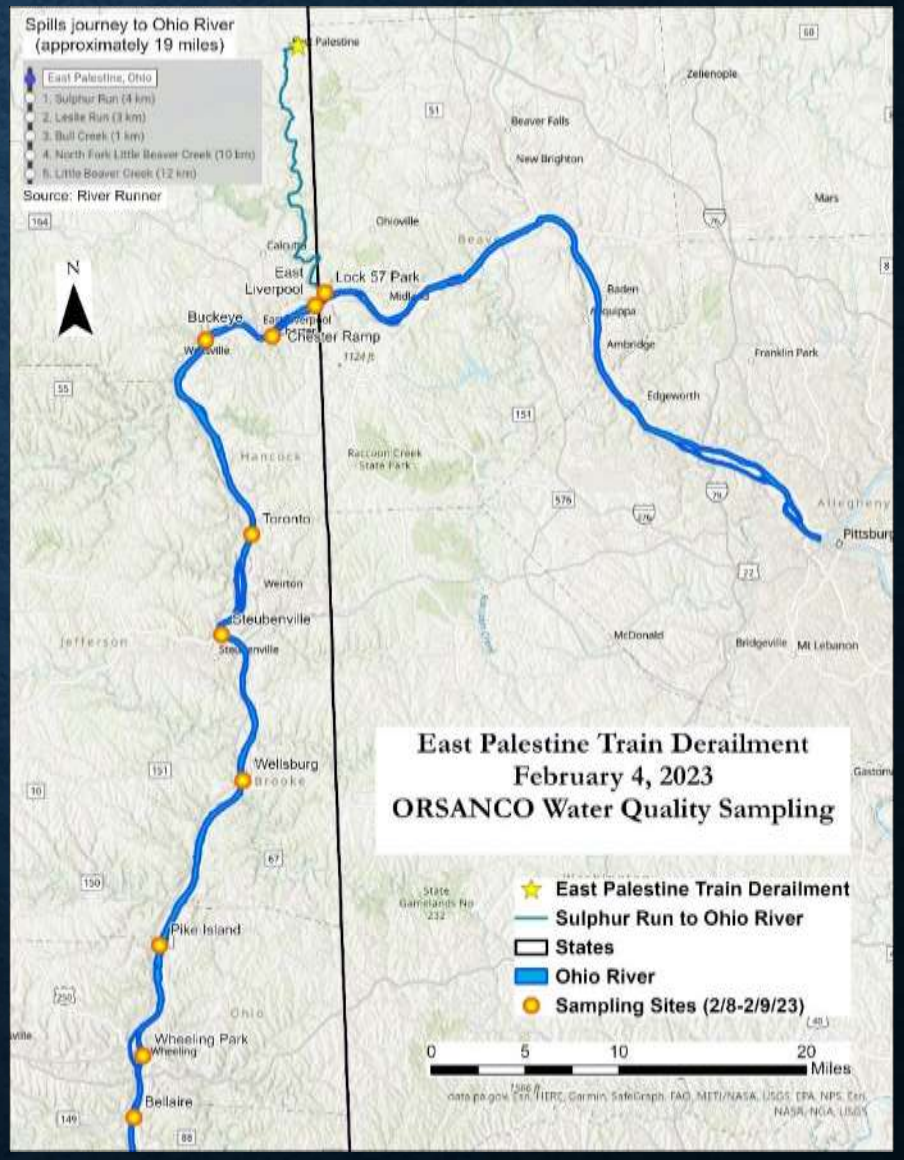
INITIAL DETECTION AT WEIRTON, WV
FEB 6, 2023 AT 1600



TIMELINE OF EAST PALESTINE TRAIN DERAILMENT RESPONSE

Feb 8, 2023 –

- ORSANCO crew sampled Little Beaver Creek to Bellaire, OH
- Samples collected in triplicate
  - 1 for local ODS
  - 1 for GCWW
  - 1 for ORSANCO
- Second crew deployed to Incident Command
- Received train manifest
- Ordered butyl acrylate standard



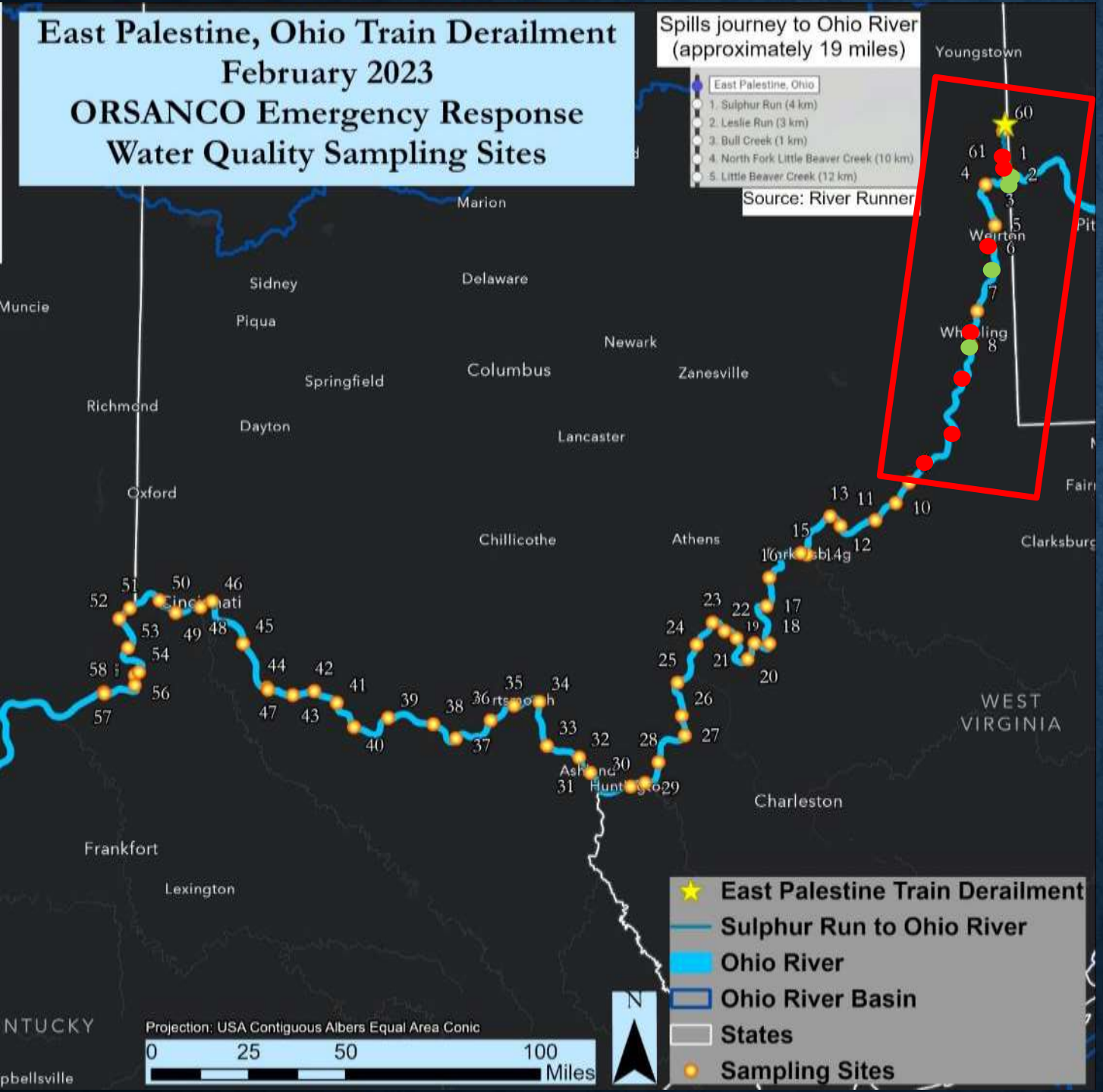
TIMELINE OF EAST PALESTINE TRAIN DERAILMENT RESPONSE

Feb 9-10, 2023 –

- ORSANCO met with response agencies & RP at Command Center
- Repeated similar sampling approach as done on Feb 8
  - Little Beaver Creek to Wheeling+
  - Samples run at Wheeling Water
- WV water intakes shut down
  - Needed 2 non-detects in finished to reopen

Feb 11 - ATSDR releases Health Guidance Values

- n-Butyl acrylate: 560 ug/L
- 2-ethylhexyl acrylate: 500 ug/L



2/10/23

- Detection
- Non-Detect

Surface Grab Samples analyzed at Wheeling ODS; presence/absence

Ref	City	Mile Point	State	Date	Time	n-Butyl Acrylate (p/a)
1	Grimms Bridge	Beaver 3.0	OH	2/10/2023	1350	present
2	Lock 57 Park	Beaver 0.2	PA	2/10/2023	1300	present
3	East Liverpool	40.2	OH	2/10/2023	1420	absent
	Chester	43.0	OH	2/10/2023	1125	absent
6	Steubenville	65.3	PA	2/10/2023	1605	present
	Follansbee	70.8	OH	2/10/2023	1300	absent
	Wheeling River Grab	86.0	WV	2/10/2023	1600	present
8	Bellaire	93.9	WV	2/10/2023	1715	absent
	Moundsville	101.7	WV	2/10/2023	1750	present
	New Martinsville	126.0	WV	2/10/2023	1900	present
	Sisterville	137.2	OH	2/10/2023	1945	present

TIMELINE OF EAST PALESTINE TRAIN DERAILMENT RESPONSE

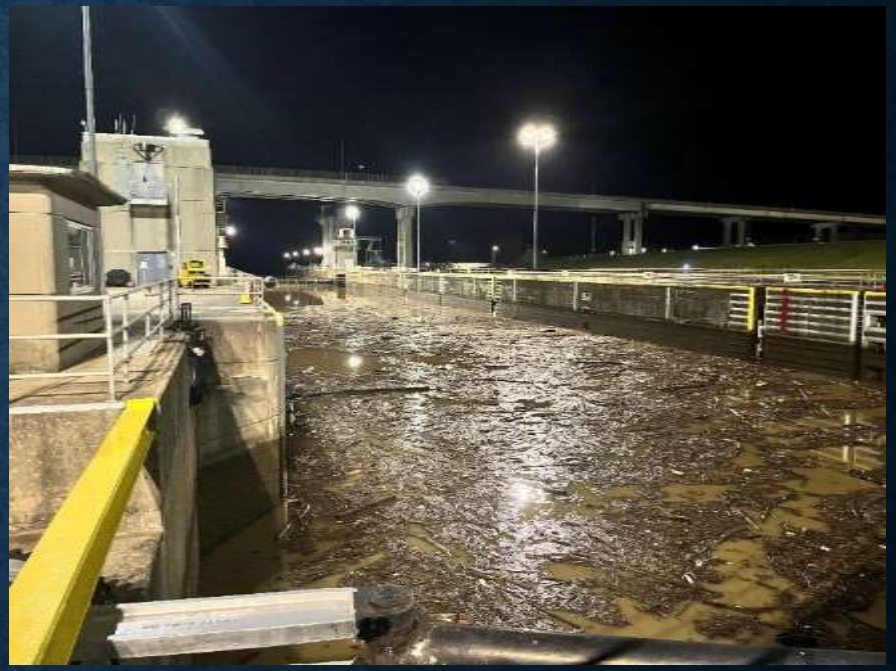
Feb 11-19, 2023 –

- Transitioned sampling to tracking leading edge
  - Sampled 50 to 120 miles per day
  - Early on plume traveled ~25 miles/day
  - Later, velocities increased to ~100 miles/day
- Daily routine:
  - Daytime - Collect samples
  - Evening - Drop samples off at ODS lab for analysis
  - Evening - Get set of samples to GCWW
  - Late night – Receive results from ODS lab
  - Late night – Run Time-of-Travel Model
  - Repeat cycle

TIMELINE OF EAST PALESTINE TRAIN DERAILMENT RESPONSE

Feb 19-20, 2023 –

- Fixed station sampling at Markland Locks & Dam
  - Sampled every two hours from lockwall
  - Samples analyzed by Louisville Water



Feb 21-22, 2023:

- Fixed station sampling at Cannelton Locks & Dam
  - Sampled every two hours from lockwall
  - Samples analyzed by Evansville Water

All samples from Markland & Cannelton non-detect

TIMELINE OF EAST PALESTINE TRAIN DERAILMENT RESPONSE

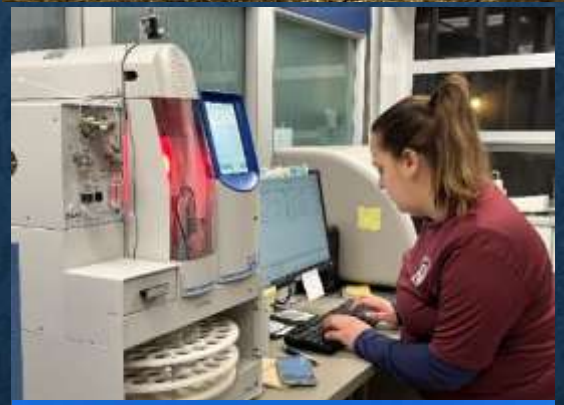
Feb 22-23, 2023 –

- Partial loss of containment reported near derailment site due to precipitation / high-flow
- ORSANCO crew sampled morning of Feb 23
- Low-level hits on Little Beaver Creek and Leslie Run
  - Butyl acrylate
  - 2-ethyl hexanol
  - 2 ethylhexyl acrylate

March-April

- Coordinated water quality sampling and analysis with several water utilities along length of river
- All results non-detect

TRAIN DERAILMENT RESPONSE



CHALLENGES

East Palestine Train Derailment

COMMUNICATION CHALLENGES

1) Limited/inaccurate incident details during early stages
2) ORSANCO not privy to response agency reports
3) Complete Unified Command not established early
4) Struggled to get a coordinated sampling plan
5) Misleading social media led to undue public alarm
6) Many do not understand nature of their drinking water source
7) Inundated with information requests
8) Intense media and political interest
9) Consistent messaging on dioxin slow to develop

ANALYTICAL CHALLENGES

1) Initially unknown materials released
   - What to test for?
2) Labs not calibrated for butyl acrylate and other compounds released
   - Needed standards to calibrate
3) Unusual detections at Wheeling ODS
   - Detections interspersed with non-detects
4) ODS capabilities and utility not understood by some agencies

DATA CHALLENGES

1) Which data to distribute and publish?
   - ODS screening vs GCWW
2) How to best report peaks less than PQL?
3) Consistent messaging with partners
4) Keeping up with sample info, mapping and analytical results
5) Connectivity issues with electronic devices

LESSONS LEARNED

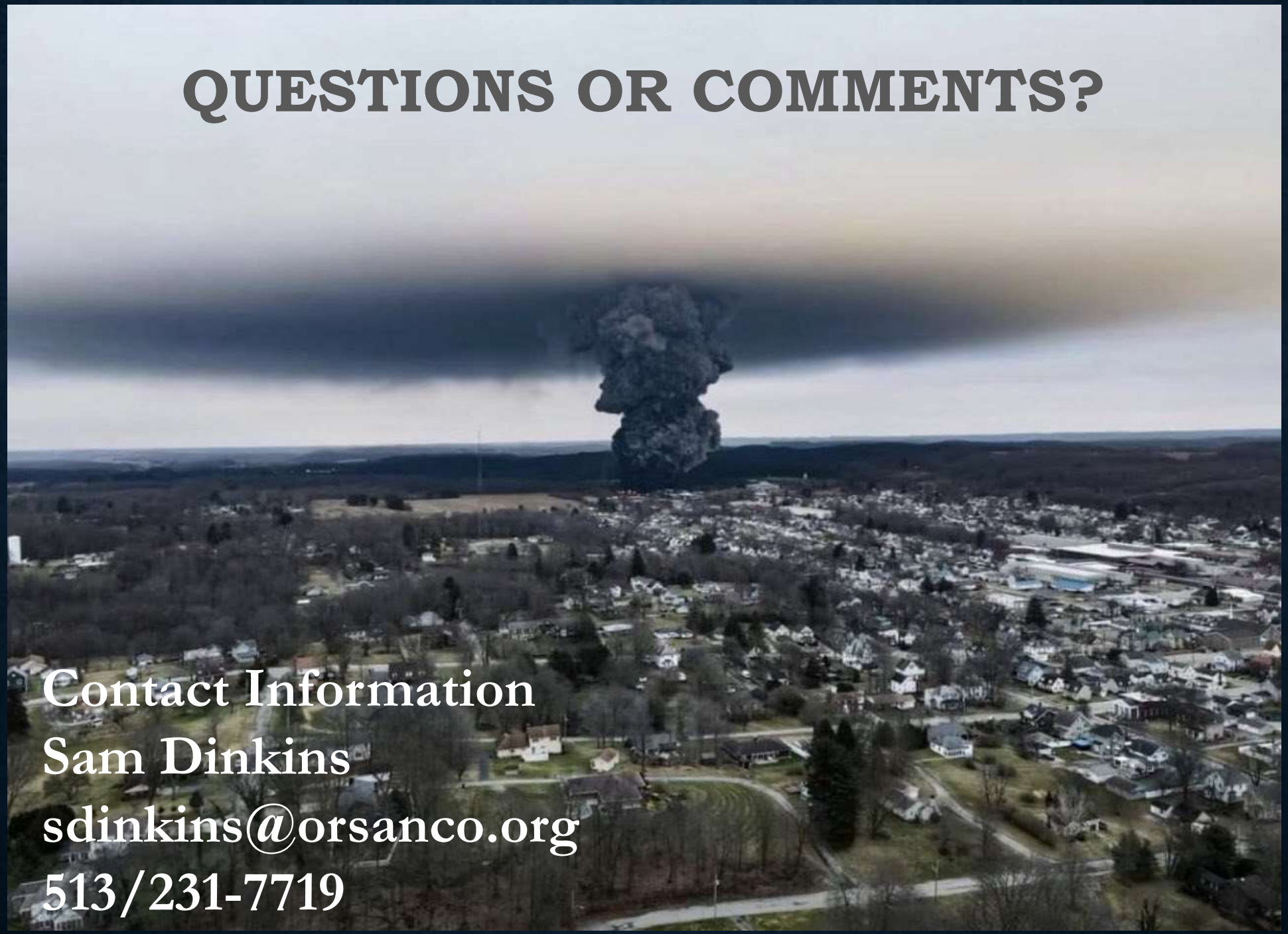
LESSONS LEARNED

1) Be proactive to post contact info and incident details online
2) Response agencies unfamiliar with key attributes of ODS network
   - Prepare materials detailing ODS capabilities, applications, and limitations to share with response agencies
3) Develop spill response toolbox to standardized data collection/reporting and improve spill response readiness
4) Need common understanding among partners regarding data reporting
   - Screening level vs certified results
   - Reporting data for peaks <PQL ???

LESSONS LEARNED
AREAS FOR IMPROVEMENT

5) Proactively determine need for Command Center engagement and water quality sampling
6) Staff resources stretched to limits
   - Need more staff cross-training for necessary redundancy
   - Sampling, GIS, data management, ODS, Incident Command, public info
7) SWIGs want to be on spill updates
8) Engage ATSDR early if unregulated materials involved
9) Keep task management groups small (e.g. sampling plan development)

QUESTIONS OR COMMENTS?



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