U.S. House of Representatives
Subcommittee on Environment, Manufacturing, and Critical Materials
2123 Rayburn House Office Building
Washington, D.C.

March 21, 2023

Dear Chmn. Johnson, Ranking Member Tonko, and Honorable Committee Members:

These comments are submitted for your March 28, 2023 hearing entitled "*Government Response to East Palestine: Ensuring Safety and Transparency for the Community*". I testified at the Pennsylvania Senate Committee on Veterans Affairs and Emergency Preparedness hearing on March 20, 2023 regarding the Public Health response to the Norfolk Southern chemical spill and chemical fires.[1] Since then, I have new information that may be of interest to the committee. As a result of independent water analysis by Purdue University researchers and field investigations, discoveries suggest unrecognized and ongoing risks to public health.

In February 25-27, March 3-4, and March 17-19, 2023 my volunteer Purdue University research team visited the impacted area at the specific request of Ohio and Pennsylvania residents. The purpose was to investigate ongoing public health and environmental impacts. We inspected areas near the disaster site, including homes, properties, and waterways. We also sampled drinking water from private drinking water wells, creeks in the area, soils, air, and surfaces. For water analysis, we applied a broad approach using gas chromatography–mass spectrometry (GC-MS) and high-resolution proton transfer reaction time-of-flight mass spectrometry (PTR-TOF-MS, operated by my Purdue faculty colleagues, Professors Nusrat Jung and Brandon E. Boor). The analytical protocols used were determined in the interest of a broad screen given the extensive nature of contaminants released and created in Ohio. This approach was applied to be protective of public health. As a result, our preliminary analysis revealed that acrolein, butyl acrylate, 1,3-butadiene, ethylene glycol, naphthalene, butyl acrylate, *n*-butyl ether, 2-butoxyethanol, and 2-ethyl hexanol were present in contaminated Sulfur Run and Leslie Run waterways. It is reasonable to expect these compounds to be present because of the Norfolk Southern manifest published by the U.S. Environmental Protection Agency (EPA) and what was reported to be released due to the fires. These compounds can present an acute public health risk when present at sufficient amounts. For example, acrolein is a breakdown product of chlorinated compounds and was detected in air separately by U.S. EPA and Texas A&M and Carnegie Mellon University researchers. We are in the process of finalizing sample analysis and confirming concentrations[2].

Following this discovery, I reviewed government agency test results which were not representative of what is likely present in the contaminated water or air. The U.S. EPA, Ohio EPA, Ohio county health department, and Pennsylvania Department of Environmental Protection (DEP) are inconsistently testing as I explained to the Pennsylvania Senate Committee hearing March 20, 2023. Because of this, officials now need to go back and test correctly if protecting public health is driving decision making. Further, by not testing correctly that lost data now inhibits understanding chemical exposures and health risks. It is unclear who made the decision to not test for chemicals likely to be present, and not look for chemicals similarly in communities across state lines. This discovery could have happened sooner if government agencies had been transparent and made publicly funded testing data publicly available. I have recommended that officials course correct their approach so that an accurate understanding of existing health risks can be obtained.

[1] Testimony of Andrew Whelton at the Commonwealth of Pennsylvania Senate Committee on Veterans Affairs and Emergency Preparedness hearing entitled "Public Hearing on the Train Derailment on the Ohio/Pennsylvania Border". March 20, 2023. https://veterans.pasenategop.com/veterans-032023/

[2] Using the GC-MS, we detected four compounds thus far with NIST library matches: n-butyl ether (88% match), 2-butoxyethanol (95% match), butyl acrylate (94% match), 2-ethylhexy acrylate (97% match). Identification of acrolein, butyl acrylate, 1,3-butadiene, ethylene glycol, and naphthalene via PTR-TOF-MS was based on detection of their exact masses (mass resolution > 6000 m/Δm). Compound identification will be confirmed following analysis of calibration standards.

Action. *Government agencies should test for the chemicals we identified. Further, officials should notify the Ohio and Pennsylvania communities in and around East Palestine that their analysis to date has not been sufficiently representative of possible exposure risks. Some of these compounds could be present in deposited particulate matter observed in homes and properties. It is unclear why government agencies have not conducted indoor surface analysis to mitigate acute exposures and provide necessary guidance on safe cleaning.*

On March 2, I sent a letter to Director Parker asking OSHA to protect workers in and around East Palestine, Ohio. During my onsite investigation February 25-27, I observed that the creeks (Sulfur Run and Leslie Run) were heavily contaminated with chemicals, something that was not widely shared with the public prior to our visit. We observed workers being exposed to chemicals, without respirators, wading through the creeks, standing in and beside the creeks, sometimes not wearing safety gloves, standing by makeshift aeration units and apparently being exposed to the emitted chemicals, and lost footing and slid off the creek bank and into Sulfur Run (he remained upright). In particular, the actions taken by the workers were volatilizing chemicals into air and causing exposures that were not guarded against by observed worker safety measures. I also asked some workers about their personal protective equipment (PPE) and they said they were not told what chemicals they were being exposed to. I also observed children, adults, and pets were near the creeks, not warned about the health hazard they posed. In my letter I asked OSHA to require access controls using contractor fencing to prevent unauthorized entry into the contaminated waterways and warning signs extending all the way down to Bull Creek, where contamination was visible on March 4 during a rain event. I also recommended worker and air monitoring where creek aeration was being carried-out and soil cleanup operations. During my recent March 17-19 visit I observed new warning signs directing persons not to enter the creeks. I also observed that several aeration units had been removed from areas where public exposures were occurring. Aeration devices have now been concentrated at East Palestine Park to blow contaminated creek water into the air.

Action. *It remains unclear if air testing to assess the past worker and public exposures near creeks and aeration units has been conducted. This should be conducted. To understand worker and public exposures, thorough chemical analysis of the creek water should be conducted. Existing testing data are not adequate for understanding the complexity of inhalation and dermal exposures.*

Discussions with residents and local leaders has indicated that that aqueous film forming foam (AFFF) for fire-fighting was used by multiple fire departments at the train derailment site. AFFF contains per- and polyfluoroalkyl substances (PFAS) according to the U.S. EPA. Because chemicals spilled from the train and set on fire were confirmed to have contacted the ground and also washed into the creeks (Sulfur Run, Leslie Run, and further downstream), it is reasonable that PFAS contamination was spread out too. [During our March 3-4 field investigation we observed contamination associated with the spill/fires 2 miles downstream in Leslie Run, it was not all contained.]. Several private drinking water wells are very close to the creeks and their drinking water quality may be partly influenced by creek water. The County Health Department has been reporting water testing results for some, but not all, volatile organic compound (VOC) and semi-volatile organic compounds (SVOC), associated with the spill and fire. To date, no PFAS testing has been conducted despite its well-known risk to human health.

Action. *Conduct environmental sampling and analysis for PFAS to determine the full extent of the contamination and ongoing health risks to residents and businesses.*

Documents I reviewed from impacted homeowners in Ohio indicated that the Norfolk Southern contractor and the Columbiana Health Department issued joint letterhead letter to private well owners so they could collect drinking water samples. Based on discussions with homeowners, apparently both groups collected a water sample, but only the health department provided water testing results back to homeowners. Norfolk Southern did not provide any water testing results.

Action. *Because protecting the public from harm is of the utmost urgency, request that Norfolk Southern immediately order their contract testing laboratories to provide unrestricted access to all private well water testing results in their entirety to the public health response agencies. This could enable government agencies to see if other chemicals present, which they did not screen for, were found by Norfolk Southern.*

During my March 17-19 visit to East Palestine, members of the community expressed concerns that East

Palestine High School was not professionally cleaned by the U.S. EPA before students, faculty, and staff reentered. Reports that faculty experienced chemical exposure symptoms such as headaches, nosebleeds, stinging eyes, sore throat, and rashes. Based on my review of the Ohio Department of Health and U.S. Center for Disease Control and Prevention's (CDC) public health Acute Chemical Exposure (ACE) survey results, the safety of the high school workers and illnesses were apparently not investigated. I did not find occupational safety chemical testing results of the school either, including wipe samples of surfaces or chemical testing of heating ventilation and air conditioning systems (HVAC). Visual inspection would not be adequate for determining chemical exposure risks in ducting. It is my understanding that classrooms, offices, and bathrooms were not chemically tested (air or wipe) or cleaned. It is also my understanding that contractors were in the area offering cleaning services on behalf of Norfolk Southern who were not trained to decontaminate buildings exposed to hazardous materials.

> ***Action.*** *Professionally clean East Palestine High School to remove residual contaminants on surfaces and in the HVAC system. Conduct testing including wipe samples to validate the environment is safe for children and adults. Determine which other buildings, where susceptible populations reside, were officially decontaminated by the U.S. EPA and which were not.*

Our volunteer team will be releasing additional findings in the coming weeks and have additional field investigations scheduled for Ohio and Pennsylvania. Please do not hesitate to contact me if you have any questions. I can be reached at awhelton@purdue.edu. I am providing information in an individual capacity, expressing my own views; and are not representing the views of Purdue University, a College or a Department.

Sincerely,

Andrew Whelton, Ph.D.

Our review of available data has found inconsistent testing by government agencies for chemicals of concern

Outdoor Air	Surface Water	Municipal Water	Private Well Water
Acrolein	Not tested	Not tested	Not tested
Not tested	Butyl acrylate	Butyl acrylate	Butyl acrylate (not confirmed)
Not tested	2-Ethylhexanol	Not tested	Not tested
Not tested	2-Ethylhexyl acrylate	2-Ethylhexyl acrylate	2-Ethylhexyl acrylate (not confirmed)
Not tested	2-Butoxyethanol	Not tested	Not tested
Vinyl chloride	Vinyl chloride	Vinyl chloride	Vinyl chloride
Benzene	Benzene	Benzene	Benzene
Xylenes	Xylenes	Xylenes	Xylenes
Naphthalene	Naphthalene	Naphthalene	Naphthalene
1,3-Butadiene	Not tested	1,3-Butadiene	1,3-Butadiene
1,1,2-Trichloroethane	1,1,2-Trichloroethane	1,1,2-Trichloroethane	1,1,2-Trichloroethane
Trichloroethylene	Not tested	Trichloroethylene	Not tested
Phosgene	Not tested	Not tested	Not tested
Ethylene glycol (Not tested)	Not tested	Not tested	Not tested
n-Butyl ether (Not tested)	Not tested	Not tested	Not tested

Purdue Surface Water Detections (Mar 7 Letter to US Senate): Acrolein, ***n*-Butyl ether**, Butyl acrylate, 2-Butoxyethanol, 1,3-Butadiene, 2-Ethylhexy acrylate, **Ethylene glycol**

PURDUE UNIVERSITY

March 12, 2023

***Figure**. **Evidence shows inconsistent testing by federal, state, and county agencies.** Slide from March 12, 2023 community meeting presentation by Andrew Whelton about emerging research discoveries. U.S. EPA has been responsible for air testing, Ohio EPA has been responsible for surface water and municipal water testing, and Ohio county health departments have been responsible for private well water testing. Not shown is that Pennsylvania DEP is responsible for private well water testing. File is available at www.PlumbingSafety.org. Letters to agencies and presentations can also be found at that website.*