



OH/PA University Research Consortium (URC)

Introduction and Overview

The Ohio/Pennsylvania (OH/PA) University Research Consortium is made up of about two dozen researchers from seven universities, the East Palestine public health community, and responding agencies/organizations. The consortium is organized by researchers from Case Western Reserve University, The Ohio State University, Kent State University, and the University of Pittsburgh. Consortium members are from various academic disciplines, bringing relevant expertise and research experience that aligns with reviewing and addressing concerns and issues associated with the train derailment that occurred February 3, 2023 and the related response activities and aftermath.

Goal of the Consortium

Our goal is to provide accurate, data-driven information to the East Palestine community plus elected officials, the media, and applicable public health and environmental agencies/organizations. We organized and assessed data from various sources as an independent group after the February 2023 train derailment. These sources of data included response agencies, supporting institutes, and other researchers. We developed objective data summaries with applicable interpretations and comments and will suggest further research to aid the community's future efforts for applicable public health and environmental surveillance and monitoring.

Glossary of terms that are used in the URC data summaries:

Acute Health Effects: Signs and symptoms (e.g., coughing; tearing; burning; choking) that may range from minor to severe that occur almost immediately or within a very short time following exposure to a causative hazardous agent. Acute effects are typically reversible.

Acute Exposures: Conditions related to a short-term, non-continuous exposure typically via inhalation and/or dermal/eye contact with a hazardous agent for a short duration.

Chemical Carcinogens: Chemicals that can cause cancer which is often irreversible without medical intervention.

Chemical Irritants: Chemicals that interact with mucous membranes such as eye, nasal, and lung tissues and may cause minor to more extreme burning, coughing, tearing, or choking-like symptoms. Irritant effects are typically reversible once exposure to the source is discontinued.

Chronic Health Effects: Adverse effects as disease (e.g., lung cancer) that typically develops slowly over a relatively long period of time (e.g., years) often characterized by ongoing or recurring symptoms and progression of effects. Most often associated with longer term exposures to lower concentrations of contaminants over long periods (e.g., years). Chronic effects may be reversible or irreversible.

Chronic Exposures: Conditions related to a long-term, continuous exposure typically via inhalation, dermal/eye contact, and/or ingestion of hazardous agent for a long duration.

Exposures: Conditions that may initially result in external contact of persons with hazardous agents or materials via inhalation of airborne chemical, microbiologic, or radiologic contaminants; ingestion of water- or other liquid or foodborne contaminants and/or contaminated hand-to-mouth contact; or dermal and/or eye contact with contaminated surfaces or other materials.

Hazard Identification: A process that involves determining the type of contaminants, the levels of contamination, and the inherent magnitude of harmful characteristics (e.g., toxicity) as well as the fate of the contaminants and the potential that exposure to the contaminant will occur.

Labile Chemicals: Chemical contaminants that due to their structure and properties more readily or easily breakdown, degrade, or disperse once released into the environment.

Limit of Detection (LOD): In general, LOD refers to the lowest amount of a chemical that can be detected and measured with certainty, respectively, by a field or laboratory instrument. LOD levels are usually well below accepted environmental limits and human exposure limits.

Limit of Quantification (LOQ) and Reporting Limit (RL): The LOQ value is higher than the LOD, and represents the lowest level at which the laboratory can be confident in the accuracy of the compound concentration based on standard equipment operation.

LOQ levels are usually well below accepted environmental limits and human exposure limits.

Persistent Chemicals: Chemical contaminants that due to their structure and properties do not easily breakdown, degrade, or disperse once released into the environment.

Risk Assessment: A process that incorporates the data from the hazard identification assessment in combination with exposure and toxicity factors and characteristic to determine the likelihood of adverse health effects occurring following exposure.

Toxic Chemicals: Chemicals with the properties and structures that influence the potential to cause harm to humans and other organisms if exposure (contact) occurs at high enough levels for long enough duration.

Toxicity: The degree of harm to human health and other organisms.