Written Remarks of Charles N Haas before the Pennsylvania Senate Environmental Resources and Energy Committee

Honorable Chair Yaw, Vice Chair Pittman, Minority Chair Yudichak, and members of the committee. My name is Charles Haas, and I am the LD Betz Professor of Environmental Engineering, and the Head of the Department of Civil, Architectural and Environmental Engineering at Drexel University where I have been on the faculty, as well as lived in Philadelphia, for 28 years. My expertise encompasses areas of risk assessment, fate and transport of contaminants in the environment, hazardous and industrial waste treatment, and water quality control, which are germane to the topic of the hearing today.

My remarks today are on my personal behalf, although I note the broad interest of many at Drexel in helping to recover from the complex past at this site and develop constructive plans for the future.

Many details of the event a month ago await investigations including by the US Chemical Safety Board. However enough has emerged since to pose a number of questions and make several observations. Before I do so, it should be noted that apparently prompt action by plant personnel during the incident to avert the release of hydrofluoric acid prevented a much more catastrophic event from occurring. The Philadelphia Fire Department and emergency responders must also be commended for actions taken to contain this event.

There is a long history of past environmental degradation and lack of community engagement at this site which has been well documented in a September 2018 report authored by Christina Simone of the Kleinman Center for Energy Policy of the University of Pennsylvania.

Figure 1. Origin of PES Plume in Comparison to Prevailing Wind and Air Monitoring Locations. From Professor Peter DeCarlo, June 27 2019.

When release of contaminants into the atmosphere occur, the maximum concentrations travel along the direction of the prevailing wind. As shown by analysis of my colleague, Peter DeCarlo, none of the routine air monitoring locations were along the wind axis at the time of the fire, and therefore peak exposures could not be measured (Figure 1). Some of the peak exposures could have occurred in Southeast Philadelphia, and then after traversing the Delaware River, Southern New Jersey. In addition, a warm plume, such as from a fire, will tend to rise in the atmosphere, and the peak ground level concentrations will not occur until some distance downwind.
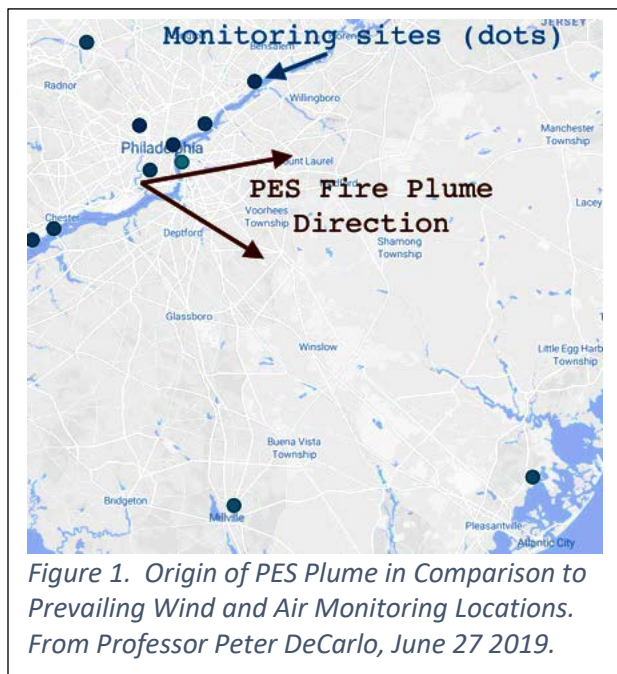
The initial reports indicated no detection of adverse materials. The written testimony of Managing Director Abernathy provides some additional information. However, the full list of what was being measured and what the detection limits of the measurements were, have, to my knowledge, not been reported. The latter is quite important, since unless the limits of detection were sufficiently low to detect concentrations at appropriate levels of concern for the general population (as opposed to emergency responders), assurances are of limited value.

Consider the analogy of a breathalyzer that had a detection limit of 0.3 percent blood alcohol --- versus a 0.08 percent for low level DUI in Pennsylvania. What would be the value of a non-detect under that circumstance?

I would also note that the comparison of measurements to ACGIH (American Conference of Governmental Industrial Hygienists) Threshold Limit Values is appropriate for protection of workers. However, for protection of the general population, other benchmarks should be used such as the acute exposure guideline levels (AEGLs), where available.

The presence of dark gray or black smoke during the fire is indicative of the presence of products of incomplete combustion, unburnt hydrocarbons, and/or particulates released from the vent. Some of these contaminants, beyond having impacts on immediate respiratory health, could have deposited on the ground for possible later resuspension, or on the Delaware River with impacts on aquatic resources. Absent a thorough environmental survey occurring more contemporaneously we cannot know.

I will conclude my remarks here and look forward to questions that you may have.