Members of the Ohio Power Siting Board:

As you continue studying the many pages of information in the Duke Central Corridor Extension Gas Pipeline Request (16-0253-GA-BTX), please devote some extra attention to the environmental issues this project raises.

Duke's study of environmental issues, actually performed by a hired contractor, consisted of a review of very old reports and a very superficial screening field-study[1]. This document **fails to address many important questions**:

1. What impact will installation of the pipeline have on subsurface water flow, both during construction and over the years? The area is an ancient river valley, filled by glaciation to form what is known as a "Buried Valley". This formation is comprised of thick layers of sand and gravel topped by a layer of glacial till or alluvium, creating soils that are quite permeable. Graveled trenches associated with subsurface pipelines can function as conduits for pollution transport in the subsurface as hydraulic conductivity is typically much higher in gravel fill pipe trenches than in the soils found in Hamilton County. What data is there to indicate the proposed pipeline will NOT intersect with an existing underground plume of polluted water?
2. The route of the proposed pipeline crosses the Mill Creek multiple times. According to Pipeline Safety Trust Testimony[2] and the *Wall Street Journal*: "A congressional research report… said the 4-foot minimum (bury depth) 'appears to be insufficient to prevent riverbed pipeline exposure.'"[3] There is a great potential for the Mill Creek flow to scour the "buried" pipeline leading to high risk of serious damage or rupture of the pipe. There is also significant erosion of the Mill Creek bank in Reading, which demonstrates the risk of the flow exposing the pipeline. Are you willing to accept responsibility for a catastrophic "accident" caused by pipe exposure?
3. Much of the route through Reading is in or near a flood zone. Won't flooding cause additional migration of subsurface contaminants? Wouldn't it also put the stability of the pipeline a risk? How will Creek flooding affect the pipeline and thus, the environment? Will underground water cause ground movement and subject the pipeline to stress that could lead to rupture?
4. How will construction of the pipeline affect the Great Miami Buried Valley Aquifer System, which is beneath the entire area? Wouldn't the installation intrude into the aquifer feed zone? Furthermore, the Duke Application completely ignores the existence of the upper and lower aquifers in the Reading area.[4]
5. Of the metals included in the contractor's analysis, why were mercury and tin not included? Organotin compounds were manufactured on the old PMC site and stannic chloride was one of the reactants used there.
6. Why were so few actual samples taken along the route? How was the depth of the core sample determined? Were the reported concentrations assumed to be for the total core? What were the soil and atmospheric conditions at the time of sampling? Was it raining?
7. Who evaluated the data? Who evaluated the submission to OPSB? Was there a hydrogeologist consulted? Has anyone at OPSB seen and evaluated the raw data? What statistics were used to evaluate the data — or was none performed because of the paucity of actual samples?
8. How will the likely presence of residual chemical compounds (a wide variety of organic compounds, heavy metal ions, acids, etc.) from the sites affect the pipe coating? (Despite the concentrations reported in the study, there is no such thing as a "zero" contaminant.) Were any coating experts consulted?
9. Part of the route passes along railroad tracks with decaying ties and various chemicals having leaked onto the tracks from railroad tank cars. Nothing in the report addresses chemicals from these sources.

All of the following are on or near the proposed route:

- Pristine Site, on Cavett Lane and possibly West Street
- PMC Site (formerly Dow/Rohm & Haas), West St., which includes the old Carlisle Chemical dump sites (west and south of the fenced PMC Site. and the ground under the warehouse building (currently in use).
- Aluchem, located at the end of Landy Lane, as the pipeline route now goes between the Aluchem plant and the railroad tracks. This aluminum/chemical processor has powder releases which have been seen by residents, especially in the evening. The powder settles to the ground and presumably migrates into the subsoil. This should be checked and monitored, as this is an active business!
- Rosemont Industries, located on West Street., formerly a metal powder coating, metal plating, and metal hot dipping service. All of its processes involve heavy metals. This property is located directly east of the pipeline route. The property is now occupied by at least one business. There is a high probability that soils on the property and nearby have been contaminated.
- Nivison-Weiskopf Co., 601 Third Street, formerly a glass bottle, cardboard box, and crate manufacturing plant with 900 employees and nine acres of floor space. The plant opened in 1903 and closed in the mid-1970s. The property was cleared of structures in the 1980s and the surface was remediated by the EPA for industrial/manufacturing. The pipeline route is on Third Street and will likely lead to mobilization of the various compounds in the soil, e.g. formaldehyde, lead, arsenic, VOCs, SVOCs, heavy metals, PCBs, ACMs.
- The former Hilton-Davis site is near the southern end of the proposed pipeline route. The topography appears to lend itself to water flow that will move subsurface contaminants towards the pipeline.

My reading of the Duke "report" indicates these questions and the sites listed above have **NOT** been adequately answered/studied. This makes the environmental impact of the proposed pipeline potentially quite significant.

Please consider these issues and the many unanswered questions. The lack of statistically valid sampling and determination of contaminants make the approval of this route through the City of Reading a huge environmental and human health gamble — with a great potential for disaster.

Your only responsible action is to vote **against approval of the pipeline extension.**

Alan Ullman, PhD
Analytical Chemist, retired
Blue Ash, OH
July 23, 2019

References

1. http://dis.puc.state.oh.us/TiffToPDf/A1001001A18G27A83041J03421.pdf
2. Testimony of the Pipeline Safety Trust, presented by E. Kessler, President, before the US Senate, Committee on Commerce, Science, and Transportation, Robert C. Byrd US Courthouse, Charleston, WV, January 28, 2013.
3. *Wall Street Journal*, Floods Put Pipelines At Risk, Records Suggest Erosion of Riverbeds Jeopardizes Oil and Gas Infrastructure, Jack Nicas, December 2, 2012.
4. CW Schalk and TL Schumann, Hydrogeology, Ground-Water Use, and Ground-Water Levels in the Mill creek Valley Near Evendale, Ohio, Water-Resources Investigations Report 02-4167, US Geological Survey, Columbus, OH, 2002.

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