To the Planning Department , Town of Lansing :

I am an emeritus professor of soil science at Cornell with considerable experience in assessing heavy metal contamination in soils caused by industrial or commercial activity (see, for example, a few of my publications listed below). I write this note on the subject of the TeraWulf proposed project that would excavate soils and disturb the site of the old Milliken Station Power plant. After 64 years of coal burning at the Milliken Station plant with tens of millions of coal burned, some toxic metal contamination of nearby surface soils was inevitable because of aerial deposition of ash particles and fumes escaping the stacks. In fact, published studies have shown that soils adjacent to older coal-fired power plants typically have elevated concentrations of heavy metals including lead, arsenic, beryllium, strontium, barium, mercury, vanadium, zinc, copper, nickel, manganese, cadmium and chromium (e.g., Kravchenko et al., 2025; George et al., 2014). Although less studied, the highly toxic metal thallium (Tl) is also known to be released from coal-fired power plants to the environment (Vanek et al., 2016; Lopez Anton et al., 2013) and is a contaminant of coal ash (Kleszcz et al., 2021). I mention thallium here because several decades ago I conducted a small surface soil sampling project with co-researchers near the Milliken Station Power Plant stacks and found elevated levels of extractable thallium in a few of the soils nearest the stacks. Although this study was quite preliminary and was never followed up on, it does suggest that more thorough sampling and testing of soils in the vicinity of the power plant is advisable for thallium plus the entire suite of heavy metals (listed above) known to be associated with environmental contamination by coal combustion. It is my understanding that the soils and wetlands studies of the site so far submitted to the Town fail to reference any sampling and analysis of soil or water for the contaminants known to be associated with coal-fired power plants.

Given that surface soil contamination near the power plant site by at least several of the above-listed toxic metals is likely, excavation or moving of heavy metal-contaminated soils could pose a level of risk to nearby residents, to the Cayuga Shores Wildlife Management Area, and to Cayuga Lake. Therefore, I recommend that the Town of Lansing Planning board require TeraWulf to carry out a comprehensive Environmental Impact Statement (EIS) to assess the extent of contamination on the project site before the Town considers whether or not to permit the construction of their proposed data center.

Respectfully,

Dr. Murray McBride

Emeritus Professor of Soil Chemistry

References cited regarding toxic metals in coal and soils near coal-fired power plants:

Kravchenko et al. (2025). Ecological and health risk assessments of heavy metal contamination in soils surrounding a coal power plant. Journal of Hazardous Materials, 484, 136751.

Vanek et al. (2016). Isotopic tracing of thallium contamination in soils affected by emissions from coal-fired power plants. Environmental Science and Technology, 50, 9864-9871.

Kleszcz et al. (2021) Arsenic, cadmium, lead and thallium in coal ash from individual household furnaces. Journal of Material Cycles and Waste Management, 23, 1801-1809.

Lopez Anton et al. (2013). Thallium in coal : Analysis and environmental implications. Fuel, 105, 13-18.

George et al. (2014). Human exposure risks for metals in soil near a coal fired power-generating plant. Archives of Environmental Contamination and Toxicology, 68, 451-461.

Selected McBride publications on soil heavy metal contamination sites:

Lim, MP and MB McBride. 2015. Arsenic and lead uptake by brassicas grown on an old orchard site. Journal of Hazardous Materials 299, 656-663.

McBride, MB, Shayler, HA, Spliethoff, HM, Mitchell, RG, Marquez-Bravo, LG, Ferenz, G, Russell-Anelli, J, Casey, L & Bachman, S. (2014). Concentrations of lead, cadmium and barium in urban garden-grown vegetables: the impact of soil variables. Environmental Pollution, 194, 254–261.

Zhuang, P, McBride, MB, Xia, HP, et al. 2009. Health risk from heavy metals via consumption of food crops in the vicinity of Dabaoshan mine, South China . 2009. Science of the Total Environment. 407, 1551-1561.

McBride, M.B. and J. Cherney. 2004. Molybdenum, sulfur and other trace elements in farm soils and forages after sewage sludge application. Communications in Soil Science and Plant Analysis. 35, 517-535.