

CITY OF MEMPHIS

Memphis air pollution study flawed, expert says

By [Keely Brewer](#), Daily Memphian

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Sterilization Services of Tennessee in South Memphis had been emitting EtO for decades, although the chemical wasn't labeled as a known carcinogen until 2016. (Patrick Lantrip/The Daily Memphian)

When Memphis Mayor Jim Strickland learned that a local facility has been emitting a cancer-causing chemical into the air since the late 1970s, he hired an environmental consultant to assess the risks.

[No legal authority to stop South Memphis EtO emissions, Health Department says](#)

That consultant determined that emissions were within occupational limits — and residents living in the area were notified to that effect — but an independent air pollution expert recently said the assessment was flawed from the start.

Memphis-based Tioga Environmental Consultants was hired last year to monitor air quality near Sterilization Services of Tennessee's Florida Street facility; in August, Tioga found that the facility's emissions of ethylene oxide — more commonly known as EtO — were within occupational limits.

The City of Memphis then mailed copies of the report to people living near the facility.

But air pollution expert Richard Peltier said in February that Tioga's air monitoring approach wasn't suitable to fully determine the community's overall health risks.

Peltier is a professor in the school of public health at the University of Massachusetts Amherst and a member of the World Health Organization's global air pollution advisory group. The Southern Environmental Law Center asked him earlier this year to give an independent opinion on the report. The SELC said they didn't compensate him for his expertise.

Scientists gauge Mallory Heights' cancer risk from EtO

"It's a sad story," Peltier said. "It's one that just keeps happening over and over again."

Last August, the U.S. Environmental Protection Agency told Memphians that Sterilization Services of Tennessee had been emitting EtO for decades, although the chemical wasn't labeled as a known carcinogen until 2016.

People's proximity to the facility increases their lifetime cancer risk by up to 2,000 in a million. That's in addition to their risk of developing cancer for other reasons, and it's 20 times higher than the acceptable risk level.

Peltier critiqued the Tioga report on several fronts: it wasn't sensitive enough; the sampling site was upwind of the sensors most of the time; and the sensors detect

carbon monoxide in addition to EtO. But Peltier's biggest concern was that Tioga used Occupational Safety and Health Administration standards instead of Clean Air Act standards, making the study flawed from the outset.

The City of Memphis asked Tioga to use OSHA standards, which are appropriate for monitoring air quality within a facility, not outside it.

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Occupational standards assume that the worker is informed about their exposure, taking precautions and only exposed during working hours. Those assumptions don't apply to the larger community, which falls under the purview of the Clean Air Act.

Tioga declined to answer questions about the report.

"The contractor who was hired to do this was told to measure by OSHA standards, Peltier said. "And that's what they did."

When Strickland shared Tioga's report in August, he said the community deserves definitive monitoring as soon as possible. More than six months later, there are no plans for additional testing. Strickland's office redirected questions to the EPA and the Shelby County Health Department.

The county's Health Department is working on a cancer cluster study to better

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February 3, 2023

Dear Ms. Garcia,

I write to provide your team with an expert interpretation of results from a recent monitoring campaign to assess ethylene oxide (EtO) in and around South Memphis, TN. These data are reported by the City of Memphis, and posted online on August 3, 2022. My review includes the quantitative report produced by a hired consultant that is linked within the release.

By way of a background, I am a Professor of Environmental Health Sciences at the University of Massachusetts Amherst. My academic training is in atmospheric chemistry, and I lead a research laboratory that investigates human health effects and exposure to air pollutants. My research has been funded by the National Institute of Health, the Environmental Protection Agency, and the National Science Foundation, among others. In addition to my typical faculty duties, I serve as a member of the World Health Organization's Global Air Pollution and Health Technical Advisor Group, and an Ozone Panel member for the Clean Air Science Advisory Committee. I am also an executive editor for the Journal of Exposure Science and Environmental Epidemiology.

I am submitting this review on my own behalf, and not on that of prior or current funders of my research, nor government agencies to which I serve. I am not being compensated for this review by any organization, including your organization, and thus this should be viewed as an entirely objective review of this report.

In response to community concern regarding ethylene oxide emissions that US EPA identified as deleteriously impactful to nearby communities, the City of Memphis attempted to quantify EtO concentrations in the vicinity of a local, longstanding commercial sterilizer. I understand this effort was performed by a hired consultant to conduct the measurements and analyze the data.

The specific measurement techniques chosen by the contractor - one based on electrochemical sensors, and a secondary method using passive sampling dosimetry - are viewed as methodologically unsuitable to assess non-occupational concentrations of ethylene oxide. To be clear, the contractor conducted reasonable measurements for occupational investigations and acknowledged a number of important shortcomings; however, I strongly argue that they were not appropriate for assessing community risk. My reasoning follows.

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Richard Peltier's opinion on Tioga Environmental Consultants' EtO report. To read more, [click here](#).
(Courtesy Richard Peltier)



understand historical cancer rates in the area, and the EPA has sent a proposal for stricter EtO regulations to the Office of Management and Budget.

Familiar chimney stacks at TVA’s Allen Fossil Plant coming down Friday

People’s proximity to Sterilization Services of Tennessee ncreases their lifetime cancer risk by up to 2,000 in a million. (Patrick Lantrip/The Daily Memphian)

In January, the Memphis City Council also called on Sterilization Services of

Tennessee to voluntarily reduce its EtO emissions until the EPA’s stricter regulations in place. The company has declined to do so, and it’s refused to be interviewed until there are new rules.

“All (Tioga’s study) confirmed was that it couldn’t confirm whether there were dangerous levels of EtO in the air,” said Angela Johnson, a member of Memphis Community Against Pollution. “The responsibility should not be on the residents to hold the company accountable.”

TOPICS

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Keely Brewer is a Report for America corps member covering environmental impacts on communities of color in Memphis. She is working in partnership with the Ag & Water Desk, a sustainable reporting network aimed at telling water and agriculture stories across the Mississippi River Basin.
