

Arizona Governor Katie Hobbs

1700 West Washington

Phoenix, AZ 85007

Re: Ethylene Oxide in Phoenix Ambient Air/Request for Investigation and Action

Dear Governor Hobbs:

I feel compelled to bring this to your attention and request that you take immediate action to investigate and stop the illegal releases of ethylene oxide (EtO), a potent carcinogen, into the ambient air in Phoenix.

I recently discovered the air monitoring data for ethylene oxide (EtO) in Phoenix, Arizona:

https://www.epa.gov/sites/default/files/2019-11/documents/data_summary_stations.pdf

In reviewing this data, it is notable that the levels in Phoenix are the highest of all places monitored where the EPA's National Toxics Assessment is conducting this EtO monitoring, and the levels detected at the two monitoring stations are very similar despite being miles apart, indicating widespread dispersal and large amounts being emitted into the air daily. To my knowledge, there are no facilities in the Phoenix metro area that have an air pollution permit to emit this chemical. (I learned much about this chemical and its hazards when an ethylene oxide sterilization facility was proposed in Pima County/Tucson.) Ethylene oxide is not in any way a naturally occurring chemical present in the ambient air, and is regulated as a Hazardous Air Pollutant, which requires a federally-enforceable permit with stringent emissions limits. I/Don't Waste Arizona receive a notification for any proposed air pollution permit issued by Maricopa County Air Quality Department and the ADEQ's proposed air pollution permits, and I have never ever seen any notice of an air pollution permit in Maricopa County for emissions of EtO, despite decades of reviewing proposed permits. This leads me to conclude that the EtO detected in this air monitoring is entirely from unpermitted sources, and therefore illegal, and likely a criminal-level offense, as a knowingly emitting a Hazardous Air Pollutant without an air pollution permit from a facility is a criminal act under the Clean Air Act.

For these high unpermitted EtO concentrations to be found in the ambient air in Phoenix, very large amounts of it must be being emitted, all the time. I have examined the air monitoring for EtO in the ambient air in some areas of Lake County, Illinois where concerns about cancer clusters and heightened cancer rates caused by the EtO emissions of permitted ethylene oxide medical sterilization facilities have led to public outcry and air monitoring, but the levels of EtO detected there are quite lower than here.

See: Jun - July 2019: <https://docs.google.com/spreadsheets/d/1mrY1MbFWUT5-ysl7SpD74CKMKOMo4x9i5wZAardYJ2k/edit#gid=1541426135>

Oct 2019 - Jan 2020: <https://docs.google.com/spreadsheets/d/1mrY1MbFWUT5-ysl7SpD74CKMKOMo4x9i5wZAardYJ2k/edit#gid=623390509>

Spring 2020: <https://docs.google.com/spreadsheets/d/1mrY1MbFWUT5-ysl7SpD74CKMKOMo4x9i5wZAardYJ2k/edit#gid=1269948513>

This is the source for Lake County numbers: <https://www.lakecountyil.gov/4188/EtO-Monitoring-Results>

Ethylene oxide emissions from medical sterilization facilities is emerging now nationally as a serious concern. EPA has even taken the unprecedented step of warning some communities where ethylene oxide medical sterilization facilities have operated/emitted that they might be at heightened risk of cancer. 150+ people in a 5-mile radius of an ethylene oxide facility in Covington, Georgia, are suing and claiming their epidemic of cancers was caused by the facility's EtO emissions. A woman in Illinois just won \$343 million in a similar suit, and 60 others are suing the same company she sued, which has already closed down. Meanwhile, Illinois had set far more stringent emissions standards than EPA and still, the cancer claims. EtO also lingers in the air for 2-5 months. "In the atmosphere, ethylene oxide reacts with hydroxyl radicals resulting in a half-life of 2–5 months." <https://www.sciencedirect.com/topics/veterinary-science-and-veterinary-medicine/ethylene-oxide>

EPA Region 9 tells me that there is no set standard yet for allowable concentrations of EtO in the ambient air, yet 0.02 mcg/cubic meter is being used as a proposed standard for air monitoring at the fence line of EtO sterilization facilities in Illinois, which comes from the EPA's own 1996 risk evaluation for this chemical: https://19january2021snapshot.epa.gov/il/ethylene-oxide-emissions-frequent-questions_.html If 0.02 mcg/cubic meter is a correct standard, then the air in Phoenix is testing at **20 times that level**, and that should be of great concern, warranting immediate attention and action.

The presence of EtO in the Phoenix area has serious emergency planning implications, too. It is such a dangerous chemical that if 10 pounds are released by accident during a 24-hour period, it requires immediately notifying the federal government. For perspective, it takes 1,000 pounds of sulfuric acid to be released to trigger the same federal notification. If a facility has 100 pounds of this EtO on-site at any time during the calendar year, it has to notify the fire department, the local emergency planning committee and the state emergency response commission. I don't know of any EtO being reported as being stored in Phoenix, which is further noncompliance with federal and state laws. EtO is also very explosive and flammable. It's an organic oxidizer that is harmful if inhaled – its effect on lungs has been likened to hot coffee on sugar. It has a high vapor pressure, which means an accidental release of EtOH from a standard shipping container would travel a mile in ten minutes, precluding any effective emergency response or effective warning to the public.

I can recommend the best way to determine who is releasing this illegally into the air, which is to investigate who is purchasing this chemical by reviewing shipping and purchase records from suppliers, which is something the Attorney General should be asked to do and has the authority to do. (These are not public records.) Once this has been determined, the Attorney General's

investigators should ask the facilities receiving these shipments for their permit to emit it. It is a criminal act to emit this intentionally into the air without an air permit and without controls to reduce the releases.

Sincerely,

Stephen Brittle
President
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Cc:
Attorney General Kris Mayes
ADEQ Director
EPA Region 9 Administrator
Maricopa County Attorney
Maricopa County Air Quality Department
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Phoenix City Council