



GEORGIA
DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

Georgia Update on Ethylene Oxide

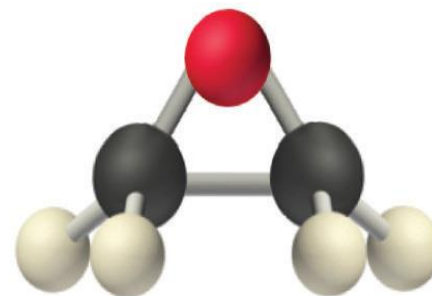
Karen Hays
Chief
Georgia EPD - Air Protection Branch

AAPCA Spring 2020 Webinar Series
Agency Air Toxics and Emerging Compounds
June 30, 2020



ETHYLENE OXIDE

- Used to sterilize medical products that cannot be sterilized by other methods
- Listed hazardous air pollutant
- Commercial sterilizers subject to 40 CFR Part 63 Subpart O
- Classified by EPA as a carcinogenic in 2016



Ethylene oxide



ETHYLENE OXIDE STERILIZATION PROCESS

Step	Subpart O Requirement
Preconditioning	Uses no ethylene oxide (EO)
Sterilization <ul style="list-style-type: none">EO introduced into the sterilization chamberEO removed through a series of purges and routed to a control device	Subpart O requires 99% control
Movement from sterilization to aeration	Subpart O has no requirements
Aeration to capture off-gassing prior to shipping	Subpart O requires 99% control
Shipping and Storage Areas	Subpart O has no requirements



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NEWS SPECIAL REPORT

Residents Unaware of Cancer-Causing Toxin in Air

By Brenda Goodman, MA, Andy Miller



This story is jointly reported by Brenda Goodman of WebMD and Andy Miller of Georgia Health News.

July 19, 2019 -- Ann Singley was trying to muscle her lawnmower out of a ditch in front of her home in Covington, GA., when she felt a tug in her breast. It was a hard lump, and in the days after she discovered it, it didn't go away.

It was stage III breast cancer. Singley, who was 33, was just beginning what would be a long and desperate fight to survive. Her youngest child, Gene, was only 3.

"She told me, all he's going to remember about her is her being sick," said Singley's mother, Velma Slaton.







STEPS TAKEN AND STATUS

- **Georgia Sources of Ethylene Oxide Emissions**
 - Two sources identified in the NATA
 - Warehouse emissions
 - Other permitted sources
 - Smaller sources
- **SB 426 – requires reporting of all unpermitted releases of ethylene oxide; all to be posted on EPD website**

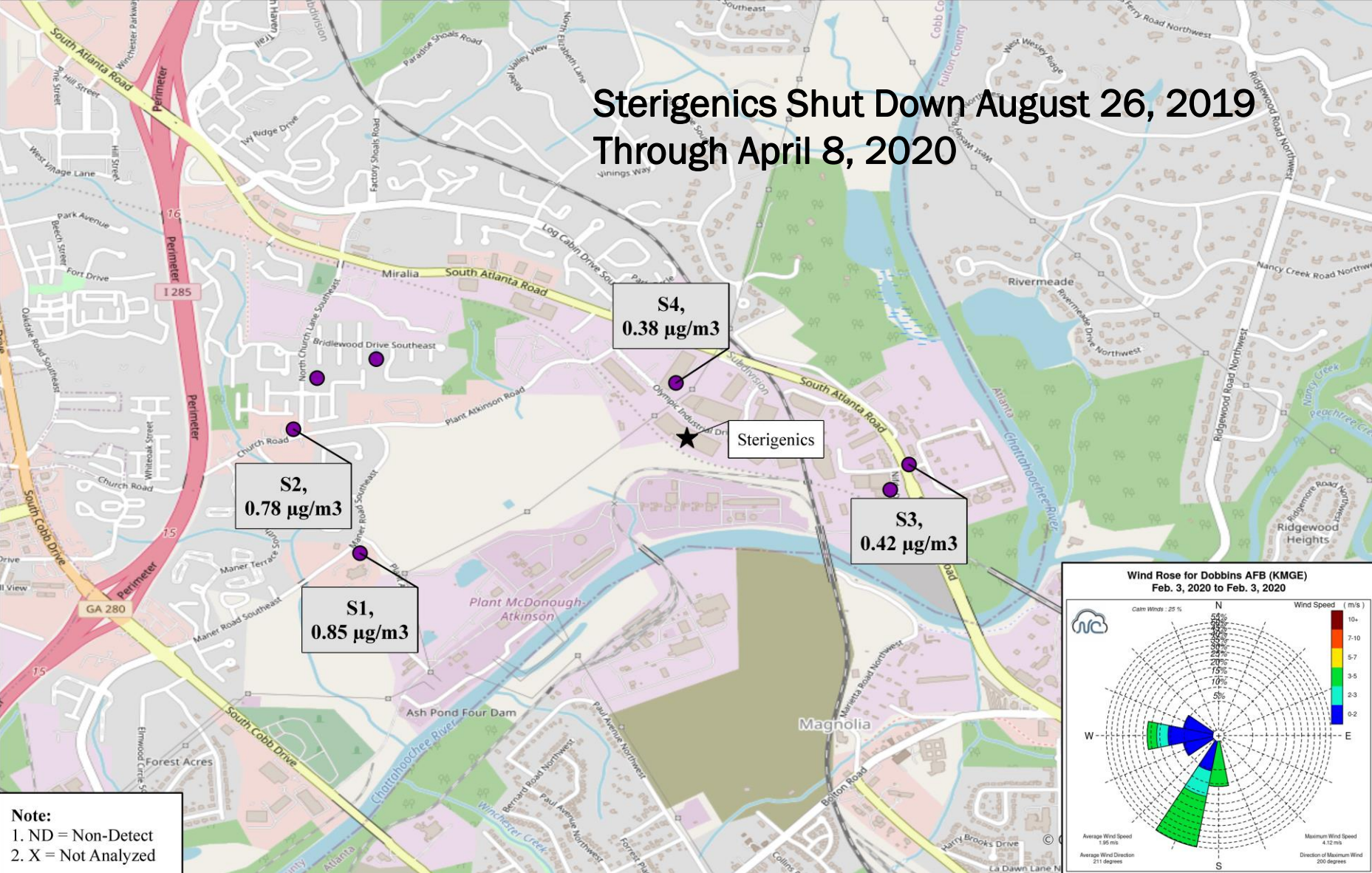


MONITORING DATA

Location	Number of Sites	Avg at Lowest Site ($\mu\text{g}/\text{m}^3$)	Avg at Highest Site ($\mu\text{g}/\text{m}^3$)
Near Sterigenics	4	0.33	0.43
Near BD Covington and GDC	4	0.32	0.54
Near Sterilization Services of Georgia	2	0.66	1.72
General Coffee State Park	1	0.25	0.25
S. DeKalb Monitoring Site (NATTS)	1	0.42	0.42

Highest valid value = $6.13 \mu\text{g}/\text{m}^3$ at S. DeKalb on 2/9/2020

Sterigenics Shut Down August 26, 2019 Through April 8, 2020



Ethylene Oxide Sampling
Cobb County, GA

02/03/2020

Sampled By: Georgia Environmental Protection Division
Analyzed By: Eastern Research Group



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CHALLENGES THAT REMAIN

- Other sources of ethylene oxide
- Offsite off-gassing (packaging and pallets)
- Measuring very low concentrations
- Data variability
- TX v. EPA on risk calculations
- Public concerns about ethylene oxide