

We've made some changes to EPA.gov. If the information you are looking for is not here, you may be able to find it on the EPA Web Archive or the January 19, 2017 Web Snapshot.



Outdoor Air Monitoring in the Willowbrook Community

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EPA will be monitoring outdoor air near the Sterigenics facility to better understand the levels of ethylene oxide (EtO) in the air. The first monitors will begin collecting air samples on Nov. 13, 2018.

How did EPA choose the monitoring locations?

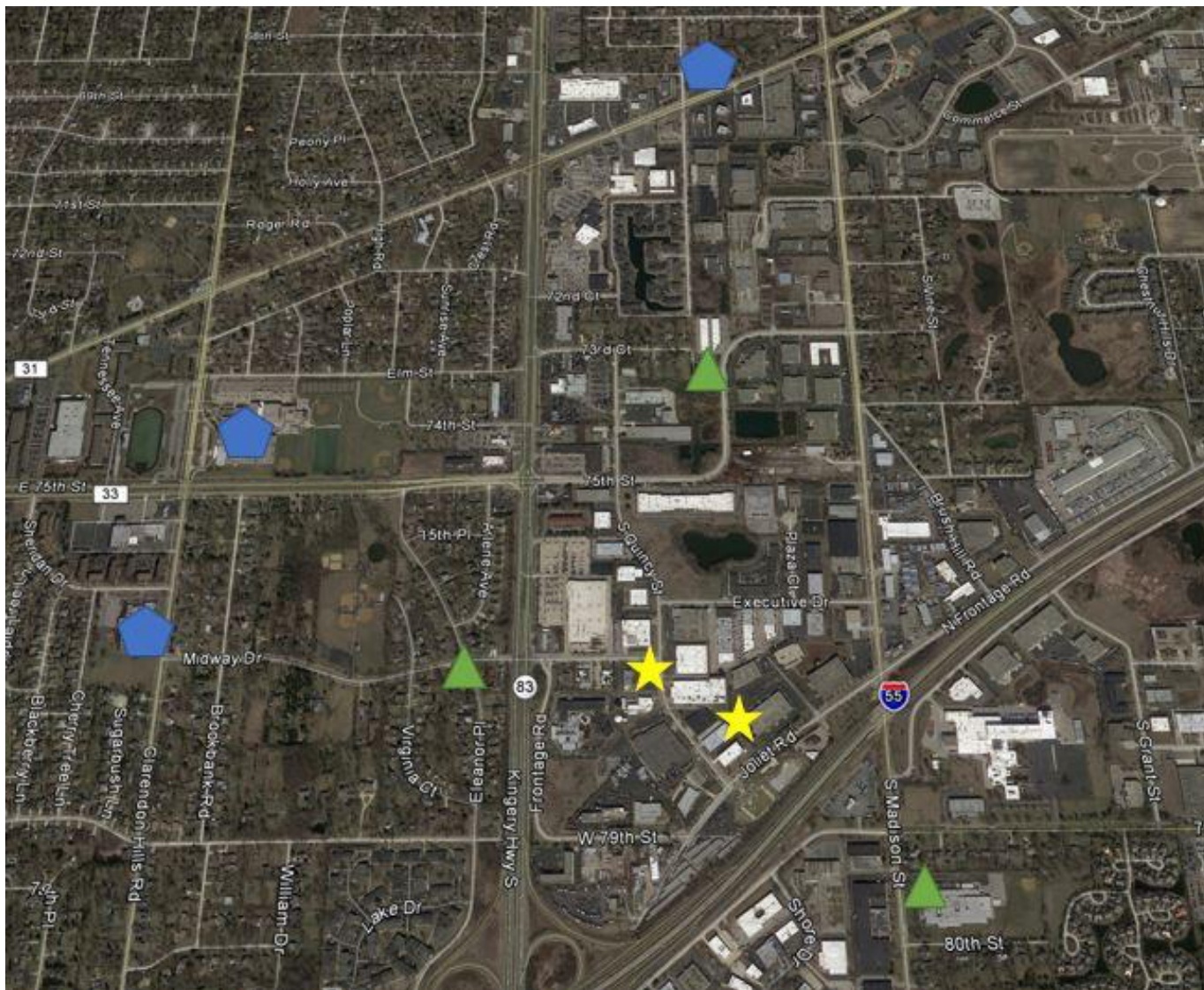
To find the best locations for placing the monitors, EPA first looked at the emission measurements collected at the Sterigenics facility (stack tests) in September 2018. We then conducted a technical assessment, including consideration of local wind patterns to see where the emissions might drift in the air during the winter season. In addition, we also consulted with the local community to get their input on monitoring locations. Based on this information, EPA selected eight locations that will provide the best picture of EtO concentrations in the outdoor air in the communities around the Sterigenics facility.

Where are the monitoring locations?

Each of the eight monitoring locations meets specific objectives:

- Yellow stars: Two (2) locations where we expect to see the highest concentrations of EtO

- Green triangles: Three (3) neighborhood locations downwind of the facility to understand residential concentrations of EtO
- Blue pentagons: Three (3) locations requested by the local communities



Why aren't there more monitors?

In EPA's experience, more monitors do not necessarily give us more useful information. When we site a monitor we focus on the best locations based on meteorology and population to give us the best understanding of concentrations in the outdoor air.

How long will EPA monitor?

Air samples will be collected every three days, over a 24-hour time frame, for three full months. We will evaluate the data as it becomes available and assess whether additional monitoring is needed.

How long before we will see the data?

EPA will make the data available to the public approximately 21 days after sample collection.

How long before EPA will tell us our risk?

Conducting an analysis of potential health risks takes time; it is a scientific process that will take several months. Estimating risk is a two-step process.

- **Step one: Understanding how much EtO people are breathing.** We start by collecting emissions data from the facility. There are two types of data: the controlled emissions (stack) measurements taken at Sterigenics in September along with estimates of the uncontrolled EtO emissions at the facility. This will take several months. We then take the emissions data and enter it into a computer model to calculate the long-term expected concentrations of EtO in the community.
- **Step two: Estimating risk.** EPA combines the modeled concentrations with information on the toxicity of EtO to estimate risks. This risk assessment will provide an estimate of an individual's chance of contracting cancer over the course of a lifetime (assumed to be 70 years) if they are continuously exposed to the expected EtO concentrations in the community.

EPA expects the risk assessment to be complete in the spring of 2019.

Quality Assurance Project Plan

Read U.S. EPA's [Quality Assurance Project Plan for Field Sampling Plan for Ambient Air Ethylene Oxide Monitoring near Sterigenics Facility, Willowbrook, IL](#)

Potential Issue Regarding Previous Ethylene Oxide Monitoring Results

U.S. EPA recently discovered an issue with the way ethylene oxide has been measured. As a result of the issue, monitors may have reported higher ambient levels of ethylene oxide than actually exist. More specifically, the chemical Trans-2-butene can be incorrectly identified as ethylene oxide when air quality samples are being analyzed in a laboratory. Trans-2-butene can be released from petrochemical industrial processes and the burning of fossil fuels. EPA discovered the issue as part of its work to improve the analysis method for ethylene oxide.

What this Means

This discovery means that the results of air quality monitoring conducted prior to October 2018 may have shown higher concentrations of ethylene oxide than were actually in the air. This includes air quality monitoring that U.S. EPA's Region 5 conducted in mid-May 2018 in Willowbrook, Illinois. U.S. EPA cannot fully evaluate the difference between reported and actual ethylene oxide concentrations, as the samples of air collected in mid-May are no longer available for analysis. U.S. EPA has made a change to its analytical method to prevent this issue in the analysis of future air quality samples – including those from monitoring started in November 2018 in the Willowbrook area. U.S. EPA is making the technical information about this change available for other laboratories.

