

Sampling Plan Phase I for Ethylene Oxide at Viant, Grand Rapids

Amy Robinson 11/13/2018

Overview

The Viant facility in Grand Rapids, Michigan has been identified by EPA NATA results as having Ethylene Oxide ambient air impacts above the Initial Risk Screening Level (IRSL) ($0.0002 \mu\text{g}/\text{m}^3$) and Secondary Risk Screening Level (SRSL) ($0.002 \mu\text{g}/\text{m}^3$). Monitoring for Ethylene Oxide can be accomplished using the TO-15 SUMMA canister method. EPA's National Contract Laboratory, Eastern Research Group (ERG), can perform the analysis for \$162.00/sample. The laboratory detection limit is $0.0819 \mu\text{g}/\text{m}^3$. MDEQ's SRSL for Ethylene Oxide is $0.002 \mu\text{g}/\text{m}^3$. Since the SRSL is lower than the detection limit of the current method for Ethylene Oxide, the monitoring data will have to be carefully interpreted. If a sample result is reported non-detect, the actual level could still be above the SRSL.

Study Design Phase I

This phase is a viability study to ensure we can detect Ethylene Oxide around Viant. Place 3-5 SUMMA canisters around the fence line of the facility to ensure that laboratory detection limits are sufficient to detect the Ethylene Oxide emissions coming from the facility. Sample locations will take into consideration the modeling results, activities and configuration of the facility, and wind direction. The exact locations will not be determined until the day of sampling, due to wind direction variability. See Figure 1.

It may take 2-4 weeks to receive laboratory results. If all samples are below the detection level, staff will investigate why this might be the case. If it is determined that the facility was operating under normal conditions that day and there were no issues with the samples being collected or analyzed improperly, then Phase II may need to wait until EPA's Office of Research and Development develops a method with lower detection limits for Ethylene Oxide.

For each sampling day, two field days will be required. On the first day, the canisters will be placed in the field at all sites and manually activated (opened up). The next day, the technician will close the canisters and retrieve them from the field. The canisters will be transported back to the Filley St facility in Lansing and shipped to the laboratory.

Once the data results are received from the laboratory, AMU staff will consult with Toxics Unit and Grand Rapids District staff. At the conclusion of the project, a memo or report will be generated to document the investigation and findings.

Figure 1: Viant Facility with Fugitive Emission Sources Marked

