O.Reg. 206/24: Air Pollution – Discharge of Benzene from INEOS Styrolution
1-Hour Benzene Limit Exceedance (October 30, 2024)

Ontario Regulation 206/24: Air Pollution – Discharge of Benzene from INEOS Styrolution requires a report to be submitted to the Ministry of the Environment, Conservation and Parks District Manager of the Sarnia District Office, the Chief of the Aamjiwnaang First Nations, and a provincial officer at the Ministry's Spills Action Centre within 14 days after an exceedance notification. This report describes the discharge above 90 µg/m^3 over a one-hour period that occurred on October 30, 2024, at eGC#3 (MECP Reference # 1-CO8XX1).

This report contains the information requested in the regulation to the best of our abilities, with the understanding that eGC emission contributors cannot be considered with 100% certainty, as it is difficult to find an exact source of emissions from such low concentrations. However, INEOS has made every effort reasonable to attempt to identify any potential processes, events and/or sources from onsite activities during this period that may have contributed to the final value. The attached table summarizes these findings.

Summary of Exceedance:

Time Period:	October 30, 2024 at 9:10 am
Location:	eGC#3
Hourly Benzene Concentration:	40.35 ppb (128.72 µg/m^3)
Operating Condition:	Shutdown/idle state
Wind Direction:	SW
Wind Speed (km/h):	16.28

Analysis of the Contravention:

eGC#3 is located on the east side of Styrene II (see Figure 1) next to the hazardous waste laydown area. During this period, the site continues to be shutdown/idled with limited activity that would produce benzene emissions. There are Frac Tanks located in the hazardous waste laydown area that collect I5 (dinoseb) water, which is generated from rainwater collected inside I5-dedicated sumps. I5 (dinoseb) is a safety chemical used in the styrene production process to inhibit polymerization. This I5 water is reprocessed in operations; however, the Sarnia site has been shutdown since April which has not made this possible.

In light of INEOS Styrolution's announcement to not restart the Sarnia site, it was determined that the I5 water in the Frac Tanks were no longer needed on site since it could not be reprocessed. The I5 water was sampled from each Frac Tank by a third-party company, which confirmed very low concentrations of benzene. Working with a third-party company to reduce dinoseb release to the effluent, the I5 water was neutralized, transferred to a storage tank, and then filtered through carbon beds before being sent to a third-party BiOx facility. This activity occurred throughout the month of October, which did not result in elevated benzene emissions. It was unknown until the liquid was removed that there was solids at the bottom of the Frac Tanks.

At 9:10 am on October 30, 2024, the vacuum truck proceeded to clean out the solids, which was not expected to cause elevated benzene emissions due to the analytics of the liquid inside the Frac Tanks showing very low concentrations of benzene. A notification from eGC#3 alerted the site due to an hourly benzene concentration of 40.35 ppb. The Frac Tank that was being cleaned was located directly upwind of eGC#3 (see Figure 1), so it was immediately halted to investigate. Personnel with handheld monitors were immediately deployed to assist in confirming that the Frac Tank may be the possible source of the alert. The eGC Dashboard

displayed that the cause of the elevated concentration was a one, 10-minute spike at 9:00am over the period of an hour (see Figure 2).

Figure 1: Map of eGC#3 and the Hazardous Waste Laydown Area (where the Frac Tanks are located).

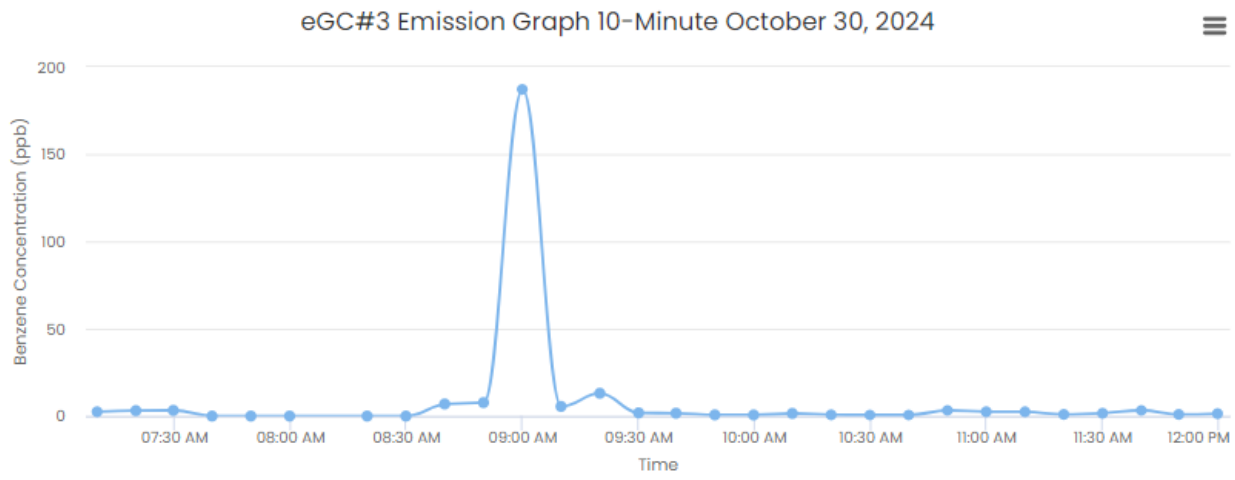

Figure 2: A ten-minute benzene emission graph for eGC#3 capturing the elevated reading which skewed the hourly-average.

A sample of the Frac Tank solids material was taken on October 30, 2024 for TCLP analysis (as per O.Reg. 347), which confirmed benzene contamination. Although the Frac Tank liquid material contained minimal benzene, it was concluded that benzene was entrapped in the solids at the bottom (undetected until disturbed from the vac truck). In conclusion, the following corrective actions

have been identified to ensure benzene emissions are controlled during the removal of this hazardous waste discovered inside the Frac Tanks:

Corrective Action:	**Implementation Date:**
Take sample of Frac Tank solids material and send it to a third-party laboratory for TCLP analysis.	Completed on November 12, 2024, which classified the material as 211T hazardous waste class.
Safely remove solid material from the Frac Tanks with benzene control measures in place and transport for disposal off-site as per O.Reg. 347.	January 30, 2024 (or sooner if possible)