INEOS Styrolution Canada Ltd.
872 Tashmoo Avenue
Sarnia, ON N7T 8A3, Canada
ineos-styrolution.com

INEOS Styrolution

Introduction:

As per Item 1.4 of the ECA Amendment, INEOS Styrolution is submitting this written update on the site's Suspension Plan and the various benzene reduction projects occurring on site. On October 24, 2024, INEOS Styrolution annouced the decision to not restart the Sarnia site before the permanent site closure by June 2026. An extensive assessment was completed to evaluate site-wide ambient air quality modelling, site emissions reduction/control efforts, and overall compliance with the Environment, Conservation and Parks (MECP) benzene limits in O.Reg. 206/24. The conclusion of the assessment was that temporarily restarting the site is not operationally feasible or economically justifiable; the site's focus is now on planning and implementing a safe, responsible, and compliant closure process. Our goal is continued compliance with regulatory limits and orders and we ask for MECP's continued cooperation and consideration as our plans and targets evolve. Additionally, ongoing open communications with Ministry of the Environment, Conservation and Parks (MECP), Aamjiwnaang First Nation (AFN), and Environment and Climate Change Canada (ECCC) is crucial.

INEOS Styrolution's Sarnia website (www.ineossarnia.com) is a publicly accessible, transparent resource for visitors to find emissions data, press materials, FAQs, and insights into the value that INEOS Styrolution and our employees bring to the Sarnia community. All written monthly updates regarding the site's benzene reduction efforts will be maintained on this website.

Benzene Removal from Benzene Storage Tanks (Tank 8 and MT303):

In order to expedite the approval process, MECP agreed to receive INEOS Styrolution's submission for Item 1.3 of the ECA Amendment in parts, and to review and consider approval of each part separately. On July 16, 2024, INEOS Styrolution submitted a benzene removal plan (referred to as "Part 1 submission"), along with a third-party modelling assessment for each step of the plan. Feedback received from MECP and AFN was incorporated into revised submissions, which were provided on July 24, 2024 and August 7, 2024.

- On July 25, 2024, INEOS Styrolution received MECP approvals for Part 1A of the benzene removal plan (transferring material above the internal floating roof height). Subsequently, INEOS Styrolution transferred benzene via pipeline from tank MT303 to a third-party offsite on the following dates:
    - August 9, 2024 to August 11, 2024, and
    - September 10, 2024 to September 12, 2024.
- On August 14, 2024, INEOS Styrolution received MECP approvals for Part 1B of the benzene removal plan (transferring material below the internal floating roof height). The following steps were taken to implement this plan:
    - Sealing of tank MT303 was completed on October 2, 2024, prior to benzene transfers into the tank. This tank upgrade involved the installation of a nitrogen gas blanketing system, pressure control valve, PVRV, Emergency Relief Valve, and sealing the last opened vent, along with updates to the DCS in the Control Room to monitor the new system (see Figure 1).
    - Initial benzene transfers from Tank 8 began on October 2nd.The internal floating roof on Tank 8 was landed on October 3rd and pumping of material continued throughout the night. Diesel was added to Tank 8 on October 4th and removed the following day. As per the ECCC Interim Order, Tank 8 was confirmed "out of service" on October 9th when measurements of the LEL% inside the tank were less than 10 without the use of mechanical ventilation.

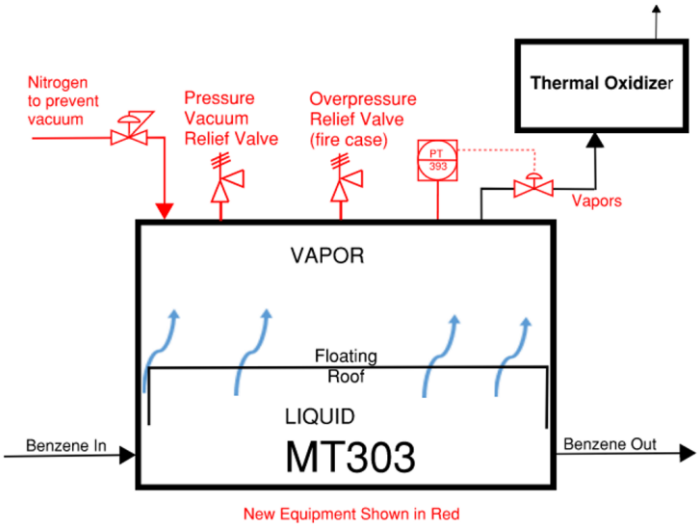

Figure 1. Diagram of new equipment installed to seal tank MT303 with a gas blanketing system.

- In light of INEOS Styrolution's announcement to not restart the Sarnia site, a revised Suspension Plan with a benzene removal plan for tank MT303 will be submitted within 30 days, as required by MECP in the approvals letter dated August 14, 2024.

Suspension Plan:

On July 30, 2024, INEOS Styrolution submitted a revised Suspension Plan (referred to as "Part 2 submission"), which describes operations at the Sarnia site during the suspension period including winterization and transfers of material to comply with the ECCC Interim Order requirements. On August 14, 2024, INEOS Styrolution received MECP approvals for the Suspension Plan, which led to winterization and transfer activities over the past few month in order to comply with the ECCC Interim Order requirements.

Winterization of Units:

Winterization is required for the site to ensure that equipment continues to be safely maintained and to prevent equipment rupture or release over the winter months. This is why material from the units and off-spec storage tanks were de-inventoried and transferred to railcars via pipeline over the last few months. Emissions from these activities were controlled by the railcar loading incinerator and flare system.

Repair of LDAR DOR Items:

The LDAR components on the Delay of Repair list have been repaired, as per Item 1.2(e) of the ECA Amendment.

Alternative Compliance Plan – ECCC Interim Order:

In addition to the benzene storage tanks (Tank 8 and MT303), ECCC's Interim Order requires Tank MT109 (off-spec material for the ethylbenzene unit) and MT401 (oily water tank) to be be taken out of high benzene service (i.e. benzene concentration below 20% wt) before October 16, 2024. Over the last month, the material in tank MT109 was transferred to another off-spec storage tank and diluted to reduce its benzene concentration. In addition, tank MT401 was skimmed and diluted as well. INEOS Styrolution had a third-party company take samples from these tanks in early October to verify compliance, as per the ECCC Interim Order requirements. In addition, ECCC and MECP were on-site on October 22-23, 2024 to complete an inspection and sampling of the tanks.

Benzene Reduction Projects:

Several of the benzene reduction projects outlined in the amended ECA only provide impact on the premise of restarting. As a result, benzene reduction projects remain on hold until site decommissioning plans are established. In light of INEOS Styrolution's announcement to not restart the Sarnia site, a plan will be developed to ensure site closure activities are completed safely, responsibly, and in compliance with the regulations and Orders. Further discussions with MECP will take place to understand the requirements.

Sump Cleaning and Emissions Control:

The wastewater treatment system has currently ceased normal operations during the suspension period, which INEOS Styrolution would like MECP approvals to minimize benzene emissions from the sumps for the purposes of section 33 of the PCIS. The majority of the basins continue to collect water (rainwater run-off from process and non-process areas and condensate), which is routed to a number of sumps on site. Since the plant is not operating, there is no hydrocarbon routinely or expected to enter SG202. Benzene levels in SG202 are currently low, as confirmed by the latest DMAP samples.

During the Suspension Period, SG201 continues to collect low/no benene containing process water and condensate from the units. The benzene levels in the wastewater sumps are currently very low (as per DMAP samples).

SG212 continues to be utilized to collect water, condensate and residual hydrocarbons that is washed from process equipment and piping for decontamination. As a result, INEOS Styrolution is committed to installing emissions control equipemnt to minimize benzene emissions from this sump vent:

	Milestones	Status	Expected Completion Date
1	Complete design, sizing and order equipment.	In Progress	February 28, 2025
2	Complete Process Safety Hazard Review and MOC reviews.	Incomplete	
3	Update carbon breakthrough monitoring program.	In Progress	
4	Install carbon beds with at least 95% destruction efficiency to SG-212 sump vent, with spare carbon available as needed.	Incomplete	

Further details regarding the SG-212 emissions reduction project will be provided in the next Suspension Plan submittal, to begin engagement with MECP and to ensure this project meets the PCIS requirements.

Cleaning out the wastewater sumps will be included in the site decommissioning plans; technical assessments and emissions control solutions must be identified and installed such that benzene emissions are sufficiently reduced to meet compliance limits.

4-Week Forecast – Benzene emission-related activities:

The following activities are anticipated to occur in the month of November:

1. Develop and submit benzene removal plan for tank MT303
2. De-inventory (remaining low points) of ethylbenzene unit and transfer to railcars for winterization.
3. Planning for site decommissioning activities.

Monthly meetings with MECP and AFN will be scheduled to maintain ongoing communication related to benzene reduction and site decommissioning, including specific timing of activities if there is any anticipated offsite impact.