

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 announced the decision to not restart the Sarnia site before the permanent site closure by June 2026. The site's focus is now on planning and implementing a safe 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.

Suspension Plan:

On November 23, 2024, INEOS Styrolution submitted an updated Suspension Plan, which described the facility's current operating status and site decommission plans for 2025. INEOS Styrolution received MECP approvals for the Suspension Plan on December 19, 2024. Additionally, on January 24, 2025 INEOS received comments from the MECP on the site's updated Air Monitoring Strategy and intends to respond by February 28, 2025.

Repair of LDAR DOR Items:

The LDAR components on the Delay of Repair list have been repaired or are no longer leaking in the site's current depressurized, shutdown state, as per Item 1.2(e) of the ECA Amendment.

Benzene Removal from Tank MT303: The approved Suspension Plan included a benzene removal plan for tank MT303, which is scheduled for March/April 2025. A more defined schedule will be provided one month prior to implementation; in the meantime, tank MT303 remains sealed with a vapour control system.

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, most benzene reduction projects remain on hold until site decommissioning plans are established. INEOS Styrolution's plan will ensure site closure activities are completed safely and in compliance with the regulations and Orders. Ongoing discussions with MECP will take place to understand the requirements.

Sump Cleaning and Emissions Control:

The wastewater treatment system continues to cease normal operations. 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 remain low, as confirmed by the latest DMAP samples. During site decommissioning, SG201 continues to collect low/no benzene 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 equipment to minimize benzene emissions from this sump vent as per the PCIS requirements. Project schedule and design details are included below:

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	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	Installation and commissioning of equipment.	Incomplete	

The Wash Pad Sump (SG212) is a small sump with a diameter of 10 feet, located south of the EB unit. Due to the size, flow and VOC loading of SG212, a carbon adsorption system was identified as the appropriate vent treatment system to achieve >95% hydrocarbon destruction/removal.

Early design plans for the control project included a vent scrubber system with liquid scrubbing and carbon adsorption beds. As a result of further design and learnings from site use and disposal activities related to carbon control systems, a slightly modified system has been designed to control emissions from SG212. A carbon adsorption system will still be utilized and will achieve > 95% hydrocarbon destruction/removal. However, design development and reviews identified that the carbon scrubber system originally identified was oversized with more emissions-generating waste removal steps compared to a carbon adsorption drum system. Waste removal of spent activated carbon drums is a simpler and lower emissions process, because there is no liquid scrubber, which will require removal and disposal of the saturated scrubbing liquids. With the new Carbon Adsorption Drum System, waste disposal of the spent activated carbon drums will be done as a closed process, by disposal of the drums at an appropriate off-site waste disposal site.

The activated carbon drum vent treatment system on SG-212 will consist of:

- Refer to Figure 9.
- Two activated carbon drums. One activated carbon drums will be in operation, while the second drum will be placed into service when the operating activated carbon drum becomes spent/exhausted.
- Piping/hoses from the sump outlet through the activated carbon drums to atmosphere.
- A small venturi system to extract vent vapors from SG-212 to the carbon beds. Plant air will be used to create a small vacuum to extract vent vapors from SG-212.
- Flowmeters and valves used to adjust the vent vapor flow from SG-212 to the activated carbon drums.

The hydrocarbon destruction/removal of the activated carbon drum vent system for SG212 is designed to be >95% which exceeds the MECP ECA amendment requirements. A VOC breakthrough monitoring program will be developed to monitor the outlet of the carbon scrubbers and determine when the standby carbon drum should be placed into service. The carbon adsorption control system will be placed in operation before end February 2025 and will continue to operate until the final decontamination of the site (by end of 2025).

4-Week Forecast – Benzene emission-related activities:

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

1. Continue to engage with third-party companies for planning the site decommissioning activities.
2. Continue removal of solid material from Frac Tanks.
3. Complete installation of SG212 Emission Control Project
4. Various decontamination activities for low/no benzene containing equipment which are not expected to have offsite benzene emissions

Figure 9. P&ID of SG212 proposed activated drum vent treatment system.

