

Ammonia Removal to Begin at the Refinery on St. Croix

On February 9, 2023, EPA approved plans to safely remove anhydrous ammonia from the refinery on St. Croix. EPA also conditionally approved plans to remove liquified petroleum gas and amines. EPA will oversee the work. Repairs to the ammonia system are scheduled to begin in March. Ammonia removal is scheduled to begin in early May and expected to be complete later in May, followed by removal of liquified petroleum gas and amines.

In Brief

Ammonia can be found in both liquid and gaseous states. Gaseous ammonia, or anhydrous ammonia, is a dangerous industrial chemical. It will be removed from the refinery by a specialized contractor. All liquid ammonia and ammonia vapors will be shipped off island for proper disposal. Further details are provided below.

Ammonia

Ammonia is a colorless gas with a very distinct odor. The odor of ammonia is familiar to many people because it is used in smelling salts, many household and industrial cleaners, and window-cleaning products.

Anhydrous ammonia is an industrial chemical which is much stronger than the ammonia more commonly encountered in household products. Symptoms related to the exposure of ammonia, in both liquid and gaseous states, include eye redness, throat and lung irritation, coughing, and a choking sensation. Ammonia has not been shown to cause cancer.

Ammonia was used as an additive within a system at the refinery that enabled the production of gasoline.

A factsheet with answers to frequently asked health questions about ammonia can be accessed at the Agency for Toxic Substances and Disease Registry's [Toxic Substance Portal](#).

Ammonia Removal Plan

40,000 pounds (approximately 8,500 gallons) of liquid anhydrous ammonia are currently stored within the refinery.

The plan requires Port Hamilton Refining and Transportation, LLLP (PHRT) and their contractor to make repairs to the system to ensure safe removal of the ammonia. PHRT's contractor, Specialized Response Solutions, will remove anhydrous ammonia from the ammonia system. The liquid anhydrous ammonia will be transferred into certified shipping containers for shipment off-island for sale or proper disposal.

After the liquid is removed, the vapor remaining in this system will be transferred to another shipping container in a closed loop, which will prevent any vapors from escaping. Nitrogen (an inert or non-reactive gas) will be used to sweep out any remaining vapors from the ammonia system. Compressed air will then be used as a final sweep of the system. Gas vented from these final sweeps will be routed to containers filled with fresh water. This operation will scrub, or remove, the ammonia vapor in the sweep gas. It will combine with the water to create a dilute ammonia solution.

The shipping containers holding ammonia vapor and dilute ammonia solution will be shipped off-island for proper disposal.

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EPA Email: StCroix@epa.gov

EPA St. Croix Refinery Website:
www.epa.gov/vi/refinery-st-croix-us-virgin-islands

VITEMA Website: www.vitema.vi.gov

Ammonia Removal Schedule

There are a number of factors that will determine the exact schedule for the removal of the liquid anhydrous ammonia, and the recovery of the ammonia vapor contained in the process piping and vessels. The factors include the availability and delivery of appropriate shipping containers, and the delivery of equipment and supplies to the PHRT site. Once all the preparatory work is done and equipment is in place, EPA anticipates that it will take about ten days to remove the liquids. It is likely that removing anhydrous ammonia vapors from the ammonia system will take about six additional days. Sweeping with both nitrogen and compressed air is estimated to take another ten days.

Air Monitoring

EPA will monitor the air around-the-clock to ensure people's safety. The locations of the air monitors are shown below. EPA will display the real-time air monitoring results on a website that will be linked from [EPA's refinery on St Croix Website](#).

EPA will continue to coordinate closely with the government of the U.S. Virgin Islands emergency management and environmental agencies. The Virgin Islands Territorial Emergency Management Agency (VITEMA) is the coordinating agency of the U.S. Virgin Islands for emergency readiness and response.

Staying Up To Date

To stay up to date during the ammonia system repair work and ammonia removal, residents can:

1. Monitor real-time air quality conditions available on the EPA public website for the PHRT facility at <https://phrt-epa.hub.arcgis.com/>.
2. Sign up for alerts from VITEMA's Alert VI System at <https://member.everbridge.net/892807736729008/new>.
3. Follow updates from local officials, including information provided at the weekly Governor's updates.
4. Monitor cell phone for notification broadcasts from local agencies, such as VITEMA.

