# Letter From Atlas

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November 7, 2023

**Alfredo DiMauro, AssocAIA**
Associate Dean of Campus Operations
Asnuntuck Community College
170 Elm Street
Enfield, CT 06082

Re: Propylene Glycol Review
Asnuntuck Community College
Atlas Project No. 4762622001

Dear Mr. DiMauro:

Atlas Technical Consultants, LLC (Atlas) conducted a review of propylene glycol and other cleaning agents being used as it relates to cleaning, circulating, draining out and adding new glycol to the closed-loop heating system that uses this coolant for the perimeter-heating units in the subject site building.

Asnuntuck has provided the timeline of events (revised 10/27/23) and associated diagrams showing the mechanical rooms, restricted areas and occupied areas during the event; Safety Data Sheets (SDSs) of the products being used in the system; and provided the details of Administrative Controls being incorporated when the system is being cleaned, circulated, flushed and replenished with propylene glycol. Atlas has reviewed these documents and details of the events planned for the new coolant into the closed-loop heating system.

*Timeline of Events, Procedures and Chemical Review*

After 3 pm on Friday, November 17, 2023, Clearwater Industries will be injecting the cleaning chemicals in the boiler room as per the recommended percentages being highly diluted (more than 99% water). The cleaning chemicals being used are Sterilex Ultra-Kleen Solution 1, Ultra-Kleen Solution 2 and Defoamer 553. The two (2) Ultra-Kleen products are corrosive to skin and eyes and the Defoamer 553 product is a respiratory irritant and eye and skin irritant. These chemicals will be handled and used by Clearwater Industries employees only and will be delivered and injected into the system in the boiler room. No thermal decomposition products are anticipated to be produced from the cleaning chemicals since the system will not be above any boiling points for these chemicals. These cleaning chemicals are stable when used properly as specified on the SDSs. The boiler room is vented to the exterior and the door to the boiler room is closed during building operations.

These cleaning chemicals will be circulated in the system for approximately 2-days (November 18 and 19, 2023). The system will be drained on Sunday, November 19, and at the same time filled with fresh water. A second draining and re-filling of fresh water will take place on

Wednesday, November 22, 2023. The fresh water will then be circulated for 4-days over the Thanksgiving holiday weekend. Modern Mechanical and Innovative Environmental will be available to check for any leaks and clean-up on a stand-by basis for response. If needed, any remaining draining and refilling will be completed on Monday, November 27, 2023; and then the fresh water will have salt added to the system for 4-days with the salt tested on day 4 to track the amount of water in the system. During the circulation of the fresh water with salt, the system will be monitored by Clearwater Industries and Modern Mechanical, and purged and/or air bleed where necessary. The addition of the new propylene glycol will occur on December 2, 2023. The new coolant in the system will be diluted with water and at a concentration of 70% water and 30% propylene glycol.

Propylene glycol is a synthetic liquid substance that absorbs water. Propylene glycol is also used to make polyester compounds, and as a base for deicing solutions. Propylene glycol is used by the chemical, food, and pharmaceutical industries as an antifreeze when leakage might lead to contact with food. Propylene glycol is clear, colorless, slightly syrupy liquid at room temperature. It may exist in air in the vapor form, although propylene glycol must be heated or briskly shaken to produce a vapor.

*Propylene glycol does not have any hazardous ingredients according to the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200.* It is stable under typical use temperatures and thermal decomposition products are not anticipated based the use of the coolant in the closed looped system. *No OSHA permissible exposure limit (PEL) or NIOSH exposure limits is published for propylene glycol.* The American Conference of Governmental Industrial Hygienists (ACGIH) has established a 10 milligram per cubic meter ($mg/m^3$) recommended exposure limit *for occupational exposure to workers who handle propylene glycol.*

Previous air sampling for propylene glycol was completed by Atlas on November 9, 2022 in the library and in the boiler room. *Levels of propylene glycol from a leak in the library were none detected less than the laboratory detection limit of 0.031 and 0.032 $mg/m^3$, and the boiler room reported propylene glycol at 1.8 $mg/m^3$, which was well below the ACGIH recommended exposure limit of 10 $mg/m^3$.*

*Administrative Controls*

As based on information provided to Atlas from Asnuntuck, Administrative Controls will be implemented. *Because of potential disruption of teaching and operations, and for water-damage to contents, Asnuntuck is planning to restrict access for occupants in the building to allow contractors unimpeded access to quickly respond to any leaks of fresh water and make repairs.* To reduce the potential for disruption to teaching and office work from any random pipe leaks that could occur, Asnuntuck is proactively suggesting faculty consider that their classes on Monday and Tuesday November 20 and 22, 2023 be taught remotely, or if student projects could be assigned for independent work off campus, or if they need or want to teach their classes somewhere else on campus. Similarly, offices have been advised to consider specific workloads and activities on campus and Asnuntuck is allowing them the option of working remotely, or Asnuntuck will provide them workspace somewhere outside of the restricted area, if possible.

*Atlas Recommendations*

Clearwater Industries employees should follow the Hazard Communication Standards for handling and use of the cleaning chemicals, and they should also have good ventilation in the boiler room and wear the proper personal protective equipment (PPE). Any leaks from the system during these procedures shall be located, stopped and cleaned up by Clearwater Industries, Modern Mechanical and Innovative Environmental. The established procedures for this event shall be followed and the Administrative Controls set forth are recommended to be followed.

*Based on the Atlas' review of the timeline of events, procedures, SDSs provided and the Administrative Controls set forth, no air sampling is being recommended at this time.* Please note that if additional information or changes in chemical use and/or changes in procedures would be implemented, then Atlas would need to review those changes.

Atlas has included the timeline/diagrams and SDSs reviewed.

If you have any questions regarding this information, please contact me at 860-549-7495.

Sincerely,

Atlas Technical Consultants, LLC

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