



## Standard Operating Procedure: Glycol Management

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### Reasons for Procedure

Glycol solutions are used as heat exchange fluids in several buildings at the University of Virginia (UVA). This Standard Operating Procedure (SOP) has been developed to promote safe work and responsible practices, and to comply with regulatory policies.

#### 1.0 Purpose

The purpose of this procedure is to describe the proper means for recovery and reuse or disposal of glycol solutions used as heat exchange fluids. This procedure includes ethylene and propylene glycol solutions.

#### 2.0 Scope

This procedure applies to activities that may discharge glycol solutions used as a heat exchange fluid to the environment. Such activities include, but are not limited to, HVAC system maintenance requiring glycol containing hydronic systems to be drained, such as coil repair/replacement, valve repair/replacement, new loads added to the system, cleanup after a leak, disposal of container heels, etc.

#### 3.0 Responsibility

##### 3.1 Facilities Management Environmental Resources

Environmental Resources (ER) personnel will coordinate updates to this SOP and be a resource during implementation of these procedures.

##### 3.2 Supervisors and Project Managers

Supervisors are responsible for reviewing this policy with all employees who may be exposed to glycol solutions at least once every 24 months and during on-boarding of new employees. Managers of projects that may expose a contractor to glycol solutions are responsible for sharing this SOP with the contractor and ensuring their compliance with it.

##### 3.3 Personnel Performing the Job

UVA staff must follow the procedures described in this SOP when preparing for and implementing tasks that involve exposure to glycol heat exchange solutions.

#### **4.0 Procedures**

- 4.1** If not done automatically by AiM, the supervisor/project manager will ensure work orders associated with glycol systems include a note that refers workers to this procedure.
- 4.2** To conserve resources, glycol solutions should be captured for reuse or recycling where feasible. Reuse involves temporarily storing the material in containers and recharging it back into the system at the end of the task. Recycling involves storing the material in containers and shipping them to a recycling facility. The original chemical supplier may provide recycling services.
- 4.3** If the glycol solution must be removed from the pipe or system to complete the task, work with the appropriate zone HVAC maintenance supervisor to:
  - 4.3.1 Coordinate the project timing with the appropriate zone manager.
  - 4.3.2 Estimate the quantity of solution to be removed
  - 4.3.3 Identify any system- or building-specific protocols for conducting the work and handling the glycol solution.
  - 4.3.4 Review the safety data sheet (SDS) for the particular glycol solution involved in the task to determine health and physical hazards, recommended personal protective equipment (PPE), handling and storage guidelines, and accidental release measures.
  - 4.3.5 Decide whether the glycol solution will be captured for reuse or for off-site disposal. Under no circumstances can any glycol solution be disposed of down the sanitary sewer system.
    - 4.3.5.1 Determine and obtain the proper type and size containers for storage of all the glycol solution removed. If the solution will ultimately be shipped off-site, coordinate with Environmental Health & Safety to ensure proper containers are used; EHS chemical waste staff are available by calling 434-982-4911.
    - 4.3.5.2 At the end of the task, return the recovered glycol solution to the system if it will be reused. Otherwise, arrange for EHS to pick up the recovered glycol for shipment to an off-site recycling or disposal facility.

#### **5.0 Review of Procedure/Training**

Supervisors are responsible for reviewing this procedure with all employees who have these job duties at least once every 24 months. Consult with ER staff if changes are proposed to the SOP.

#### **6.0 Regulatory impacts**

UVA cannot discharge any substance that would potentially cause RWSA to exceed their discharge permit limits or disrupt the wastewater treatment process.

UVA has a permit to operate a Municipal Separate Storm Sewer System (MS4) issued by the Virginia Department of Environmental Quality. This permit authorizes UVA to discharge stormwater pursuant to the Virginia Stormwater Management Program Regulations and the

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Virginia Stormwater Management Act. <sup>1</sup> An illicit discharge to the storm system is generally defined as any discharge that is not composed entirely of stormwater and are prohibited by the University's MS4 permit. This offense is punishable by civil and criminal penalties as illicit discharges constitute a threat to the public health, safety, and welfare, and are deemed public nuisances. If glycol solutions are put in the storm sewer system, this would be considered an illicit discharge.

\*Printed versions of SOPs with previous review dates are considered current as long as the version number is the same as the current version. Current versions of all SOPs are maintained on the UVA Environmental Resources website.

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<sup>1</sup> General Permit No: VAR040073, General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems.