Standard Operating Procedure:
Exterior Surfaces and Building Washing

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Reasons for Procedure

The University of Virginia (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 and the Virginia Stormwater Management Act.

Since storm drain systems are not connected to a sanitary sewer treatment plant, water traveling through the storm drain system flows directly to local streams, rivers, and lakes untreated. An illicit discharge to the storm system is generally defined as any discharge that is not composed entirely of stormwater. UVA's MS4 Program "shall include all procedures developed by the operator to detect, identify, and address nonstormwater discharges to the MS4."

1.0 Purpose

The purpose of this procedure is to describe the proper means for washing the exterior surfaces of University buildings, windows, loading docks, patios, sidewalks, roads, garages, or parking lots. Soaps, degreasers, chemicals, automotive fluids, litter, and a host of other materials either used for or generated from the washing can pollute the state's waterways if they are allowed to enter the University's storm sewer system. Departments that request or implement the outdoor washing of buildings or exterior surfaces must comply with this procedure.

2.0 Scope

This procedure applies to all washing operations on University property, including exterior building surfaces, parking garages, and paved exterior surfaces.

3.0 Responsibility

3.1 Environmental Resources

Environmental Resources will consult on wash requests, review wash plans and provide periodic oversite of wash operations.

3.2 Building or Project Managers

Managers must consult with ER regarding the proposed cleaning procedure. Managers are expected to convey the requirements of this procedure to contractors if non-UVA personnel are used for any exterior washing. Managers and supervisors are responsible for ensuring

training is conducted with the most recent version of the SOP.

Managers are responsible for ensuring that that future actions by departmental employees or outside contractors will comply with the accepted methods.

3.3 Personnel Performing the Job

Personnel must follow the correct procedures depending on whether clear water or water including detergents/chemicals will be used. Personnel should locate and place all necessary precautionary equipment prior to the start of the washing operation.

4.0 Procedures

4.1 Cleaning Plan Approval

4.1.1 The building or project manager must contact ER to review and approve washing plans before any outdoor washing takes place. ER staff will work with the project manager with the goal of finding a reasonable means to keep the project within regulatory requirements.

4.1.2 SDS's of the cleaning products should be reviewed prior to use. All chemicals or detergents used must be suitable for disposal in the sanitary sewer, which includes having a pH between 6-9. Even if detergents or solvents will not be used, the resulting wastewater run-off may contain pollutants which must not enter the storm system.

4.1.3 In the event chemicals or detergents with a pH outside of the range of 6-9 are used, two disposal options are available and must be discussed prior to the start of operations. Disposal options are further described in section 4.4.3.

4.1.4 For routine operations, once the washing procedure has been reviewed by ER for its effectiveness and a procedure has been agreed upon, building or project managers will be responsible for compliance with that procedure for future washing activities. ER will only need to be consulted for additional review if a substantial change to the cleaning procedure is required.

4.2 Cleaning Preparation

The approved cleaning procedure may vary depending on the exterior surface material, substances to be removed from the exterior surface, the location of the operation, and accessibility to the sanitary sewer. Personnel should locate and place all necessary precautionary equipment (drain covers, absorbent mats or pads, wet-dry vacuums, pumps, etc.) prior to the start of the washing operation.

4.3 Clear tap water – Primary Option

4.3.1 When clear water will be used and the resulting wastewater is not expected to contain a substance other than water and residue generated from the surface being cleaned there are two choices for the proper disposal for the wastewater:

4.3.1.1 The water can be directed onto a grass or vegetated area where it can be absorbed into the soil without causing localized erosion. No runoff should be allowed to leave the vegetated area and no runoff should at any time enter a storm drain inlet, unless filtered by erosion and sediment controls first.

4.3.1.2 Follow the procedures described in section 4.4 for containment of wash water with cleaning chemicals.

4.3.2 In the event power washing is being utilized to wash mud from a surface, proper erosion and sediment controls, including inlet protection, should be utilized to prevent sediment-laden water from entering the storm drains.

4.4 Cleaning Chemicals – Secondary Option

4.4.1 The use of cleaning chemicals is strongly discouraged. When chemicals or detergents must be used, a containment area must be set up that fully encloses the work site and keeps 100% of the wastewater within the site for proper disposal in the sanitary sewer or offsite. These effluents cannot be allowed to drain into stormwater systems or into adjacent soils.

4.4.2 All of the resulting wash water must be contained on an impermeable surface or within the existing infrastructure where it can be captured for proper disposal into the sanitary sewer. Examples of containment options include but are not limited to:

4.4.2.1 Putting down plastic sheeting or tarps, which serves as a containment pad, and using impermeable berms to contain the liquid on the sheeting.

4.4.2.2 Sandbags used within the storm drain system can allow material to be contained for collection. A pump system or wet-dry vacuum can be used to collect the wastewater for proper disposal in the sanitary sewer or in a drum or tote to be taken offsite.

4.4.2.3 Liquids can be allowed to evaporate and any solids left behind can be disposed in a dumpster.

4.4.3 Resultant wash water must have a pH between 6-9 to be allowed to be disposed of in the sanitary sewer. In the event a chemical is used with pH outside of this range, one of the following procedures must be followed:

4.4.3.1 Arrangements must be made to collect the wash water to send off site for proper disposal, or

4.4.3.2 The wash water must be collected for on-site adjustment of the pH to approved sanitary discharge range. The following requirements apply for on site adjustment:

4.4.3.2.1 Personnel must have pH test strips or a pH sensor available.

4.4.3.2.2 Common pool chemicals, or common household items such as baking soda or vinegar could also be used to modify the pH range.

4.4.3.2.3 The wash water must be thoroughly mixed throughout the containment to ensure the pH of the entire container is brought within the acceptable range.

4.4.3.2.4 The water should also be filtered, as appropriate, if solids are present.

4.4.3.2.5 The pH of the water must be reviewed by ER prior to each sanitary sewer discharge.

4.4.4 Larger jobs can be broken into smaller sections with moving containment if necessary. UVA Utilities or an outside contractor can be used for large jobs requiring sandbags or drain plugs to trap wash water within the storm sewer system before being pumped to the sanitary sewer.

4.4.4.1 If contractors are performing work for a large job that requires manhole entry, the project manager must consult with UVA Utilities and confirm if contractor personnel need confined space certifications.

4.4.5 When power washing old paint off a building, the wastewater will contain paint chips that need to be collected, evaluated, and disposed of properly. Old paint stripped off of buildings may contain heavy metals (such as lead, chromium, cadmium, or mercury), and may need to be disposed of as hazardous waste. Contact UVA EHS at 434-982-4911 for proper disposal of such material.

5.0 Review of Procedure

All location and project managers who perform and/or request that these washing operations be performed are responsible for reviewing this procedure with all employees who have these job duties at least once every 24 months. Any project managers who hire contractors to perform these job duties are required to convey the requirements of this procedure to the contractors.

6.0 Illicit Discharge Violations

Illicit discharges of exterior surface wash water 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.

*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.