

Guidelines for Discharge of Automatic Fire Sprinkler Water

March 2005

The following guidelines apply to the design and discharge of automatic fire sprinkler (AFS) water during initial acceptance, periodic testing, or other AFS discharge activities, and are to be followed by all UC Berkeley staff, design consultants and contractors.

Background

- 1) AFS water is from a potable water source and therefore contains chloramines, which are toxic to aquatic organisms.
- 2) EH&S understands that AFS water in campus buildings does not under any circumstance contain antifreeze or biocidal agents.
- 3) Discharge of AFS water to a storm drain system is conditionally exempt from regulation under the Clean Water Act, unless it is determined that the discharge is a "significant contributor of pollutants" or would have an "adverse impact on receiving waters".
- 4) The volume and velocity of AFS discharges directly to landscaping are such that damage can potentially result without some form of energy dissipation, and could also lead to soil erosion and release of sediment-laden water into storm drains.
- 5) Discharge to the sanitary sewer, while ideal, may not be practical for all projects due to manhole or other connection, and in any case must be an indirect (no provide an air gap) connection per NFPA 13, Section 4-14.3.6.1

Discussion

Regarding Item 3 above, potentially significant pollutants EH&S has identified are chloramines and sediment, as well as suspended material (which can contain metals) present in sprinkler pipes that have not been recently flushed.

Chloramines can be easily removed by use of sodium thiosulfate in tablet or liquid form. This is safe and accepted method of removing chloramines, and EBMUD has been employing this practice for several years during water main breaks.

By use of energy dissipation (e.g., splash guard, concrete chunks, rocks), both landscape damage and sediment loading can be minimized or eliminated.

It is possible that some suspended material/dirt present inside the sprinkler pipes will be flushed out during testing. EH&S understands that the amount of this material is not significant if the pipes are flushed regularly, so would not consider it a "significant pollutant source". Further, this can be mitigated as described below. However, if the discharge is not clear, it could potentially violate water quality objectives set for Strawberry Creek.

Guideline

If feasible, discharge AFS water to the sanitary sewer, ensuring that an air gap exists between the AFS discharge and the receiving wastewater.

If it is not practical or feasible to discharge to the sanitary sewer, AFS water may be discharged to a landscaped area, using all of the following controls:

- to the greatest extent possible, a landscape area shall be found with sufficient capacity to contain the AFS discharge without eroding the surface and discharging sediment across pedestrian areas.
- the AFS discharge water shall flow through a mat containing sodium thiosulfate tablets (or equivalent) before flowing to a landscaped area in case some of the water overflows to the storm drain or Strawberry Creek. Discharges to the storm drain or Strawberry Creek are not allowed if the AFS water contains visible amounts of suspended material/dirt/metals.
- an energy dissipation device shall be employed as needed to prevent harm to the landscape and sediment loss

Any exceptions to this guideline shall be approved in writing by the EH&S Environmental Protection team (2-3073).