

Foam Filtration Fall 2010 Research

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Reflection Reports

Foam Filtration Unit Design

This filtration unit design should be optimized according to the required surface area and filtration velocity parameters determined through previous laboratory experiments. In addition, it should minimize the required plan area, as well as maximize the ease of maintenance for the operator.

Head Loss Calculation

The amount of headloss that occurs with the build up of particles in the foam will determine how often the filter will require cleaning, and the additional height required for the walls of the filtration unit to accommodate this additional head loss. It is therefore important to measure the change in headloss over the running time of the filter.

Layering Foam Porosity

Previous research has been conducted with 90 ppi foam, however there may be an optimal layering that incorporates other pore sizes (30 and 60 ppi). Experiments will be conducted using these different pore sizes to determine what layering leads to the best filter performance.

Varying Influent Turbidity

Thus far, filter performance has been tested using 5 NTU water. A variety of influent turbidities must be tested to determine the range the filter produces effluent turbidities of less than 1 NTU.