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PSS Filter Foam

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At the plants in Honduras, the head loss through the lamella plates is much less than the head loss from the water flowing through the inlet ports. Because of this, the flow throughout the plate settlers is uniformly distributed. To even out these flows, a geotextile foam is placed on top of the plate settler to create the same head loss through the lamella plates and the water flowing through the inlet ports.

Overview of Methods

The same experimental set up is used for the experiments run with the plate settlers, with a slight addition to the apparatus. A tube is in the top of the sedimentation tank with a pump to pull water off the top. The water then goes through the foam where a pressure sensor attached to both sides of the foam measures the pressure difference. This is used to calculate the head loss through the foam. The water then flows to a turbidimeter to see if the foam filtered out any floc particles that made their way into the effluent.

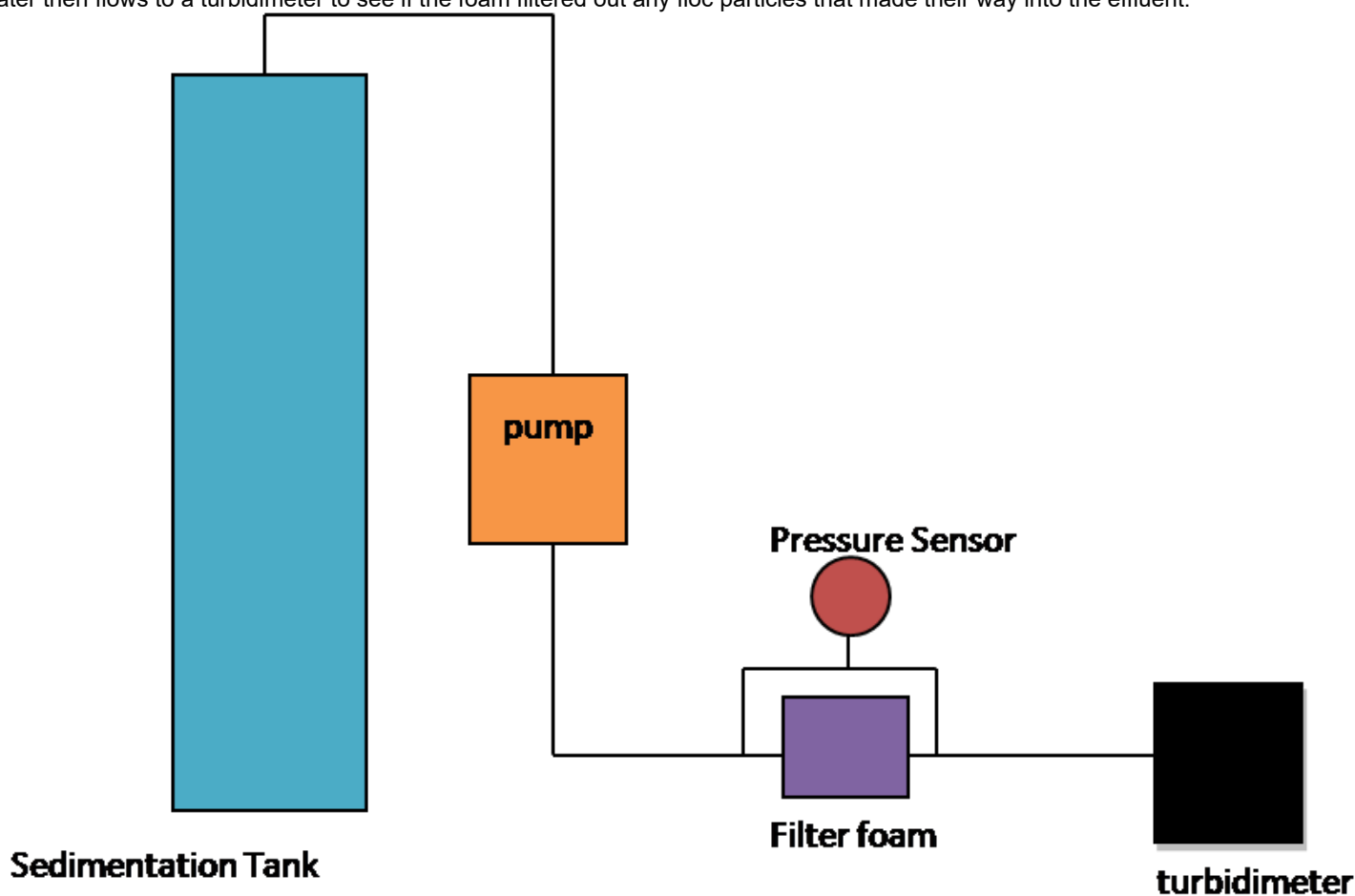


Figure 1: Schematic of experimental apparatus

All of the calculations performed for this experiment were done in [MathCAD](#).

Preliminary Results

The filter foam apparatus was first tested using the ramp state function used in the [velocity gradient experiments](#).

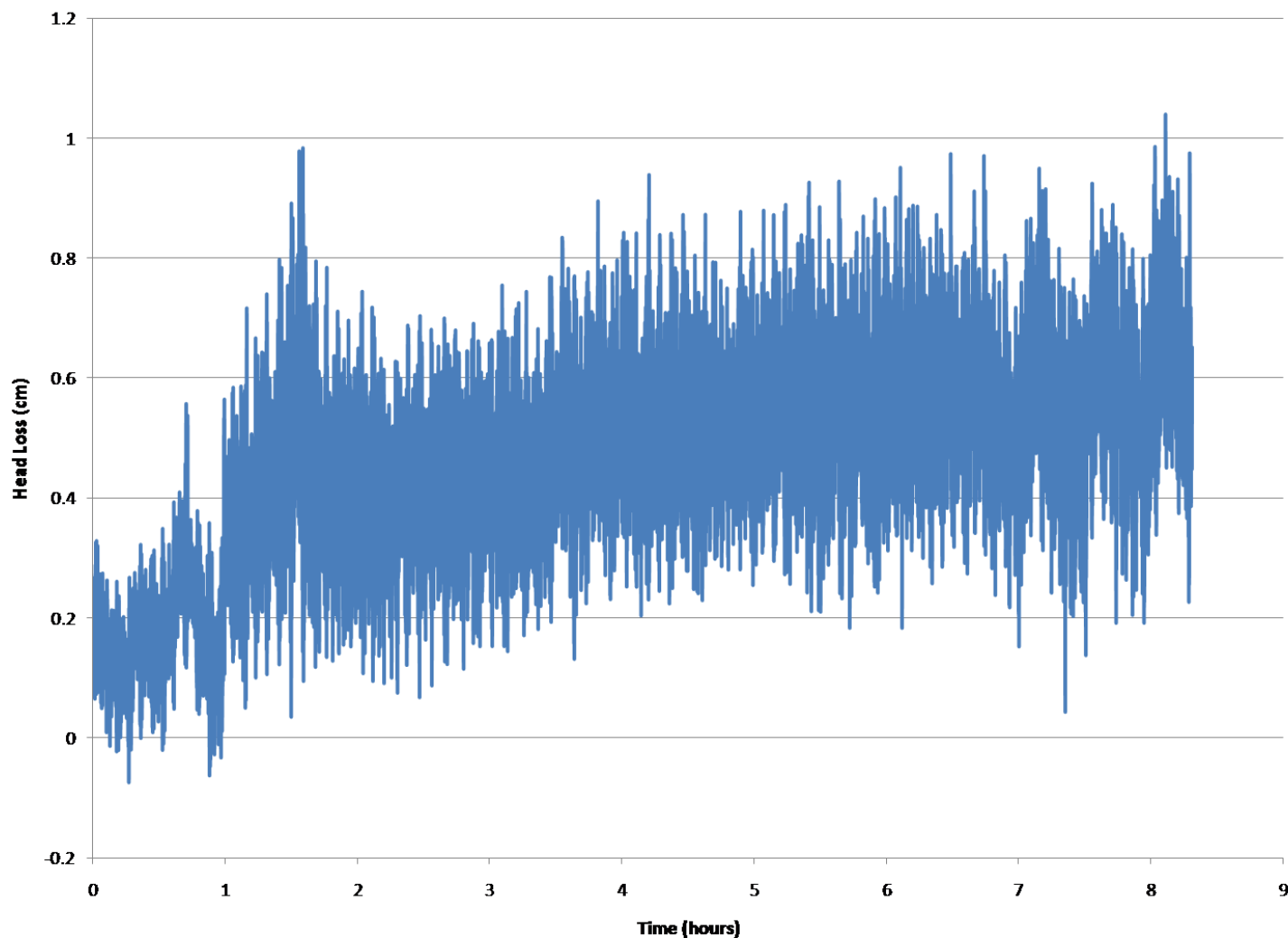


Figure 2: *Head loss through the foam as a function of time*

The data collected for this experiment is close to the results that were expected based on the calculations done in MathCAD using the Hagen Pouiselle equation to approximate the head loss across the filter foam. The spike in the data could have been caused by a clog in the filter foam, and more experiments will be run to confirm this.

No labels

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