FPST 2483 Lab #06-Hands-on Hazen Williams Name:_____

Part A

Objective

After completing Part A of this laboratory, students will be able to experimentally establish the Hazen-Williams Coefficient of Roughness for a section of piping and through testing the equivalent pipe length of elbows and tee fittings.

Procedure

Watch the lab activity at OSU and then participate in the lab at SWJTU.

Using the piping arrangement provided, the pipe diameter and pipe length between gauges must be measured. Flow is then to be introduced into the piping system and stabilized at three different flow rates as specified by the instructor. At each flow rate, the pressure on the two pressure gauges is to be recorded.

After completing the steps above, an elbow fitting is to be placed into the piping system and the procedure from above using the exact same flows is to be repeated.

Next, the procedure is to be repeated again using the same flows with a tee fitting in place of the elbow.

Calculations

Using an algebraic manipulation of the Hazen Williams formula, an average value of the Coefficient of Roughness is to be determined from the data collected in the first activity.

Next, using the data collected from the final two activities, an average equivalent length for the elbow and tee fitting is to be established.

Submittal:

After calculations, submit a lab report in the format detailed in Lab #1 and submit to Canvas.