



City Utilities Design Standards Manual

Exhibit W5-7 Friction Losses, Unidirectional Dead End Segment Worksheet

Created: January 1, 2002

Revised: June 10, 2014

Step 1: Sketch the Pipe Segment

Segment ID# _____

Step 2: List Variables

Flow ←→ (circle one) diameter _____ (in) C _____

L _____ (ft) Q _____ (gpm) Age: New or _____ years

Step 3: Determine head loss (in feet)

hf = (10.44) (L) [Q^1.85 / (C^1.85 * diameter^4.87)]

hf = (10.44) ([]) [[]^1.85 / ([]^1.85 * []^4.87)]

hf = ([]) [[] / ([] * [])]

hf = ([]) ([]) = _____ ft of loss

Step 4: Convert head to psi

hf (ft) = [] * (1 psi loss / 2.31 ft loss) = _____ psi of loss