PRESSURE DISTRIBUTION EXAMPLE

Orifice Discharge Rate

(Dia in inches)^2 x √Head in feet x 12 = gpm/orifice

(0.125)^2 x ⊗ x 12 = 0.41 gpm/orifice

Network Discharge Rate

450 gpd ÷ 0.45 g/sf/d ÷ 4 sf/lf = 250 lf

250 ft ÷ 2 ft o.c. = 125 orifices

125 orifices x 0.41 gpm/orifice = 51.25 gpm network discharge

Total Dynamic Head (TDH)

Static Head + Dynamic Head = TDH

Static Head = elevation from pump suction to discharge elevation

Dynamic Head = fittings, valves, line friction loss, residual head desired at orifice

Minimum Dose

(5 to 10 times Volume of Network)

Network in lf x Lateral volume in gals/lf x 10 = Minimum Dose

Lateral Volume calculations:

(Dia in inches)^2 x Π ÷ 4 x inches/foot ÷ inches^3/foot^3 x gals/foot^3 = gals/lf

((1)^2 x 3.14 ÷ 4) x 12 in/ft ÷ 1728 in^3/ft^3 x 7.48 gals/ft = 0.041 gals/lf

250 lf x 0.041 gals/lf x 10 = 102 gallons Minimum Dose

Timer Control Setting

450 gpd ÷ gals per minimum dose = cycles per day

1440 minutes/day ÷ cycles/day = minutes/cycle

Min.Dose / Network Discharge = ON time

Minutes/cycle – ON time = OFF time

450 gpd ÷ 102 gals = 4.4 cycles : SAY 5

1440 mins/day ÷ 5 cycles/ day = 288 minutes/cycle

102 gal/dose / 51 gpm = 2 min ON time

288 minutes/cycle - 2 min ON = 286 min OFF time

Volume per inch of Pump Tank Depth

L inches x W inches x 1 inch of Depth ÷ 1728 in^3/ft^3 x7.48 gals/ft^3 = gals/inch

96 in x 60 in x 1 in ÷ 1728 x 7.48 = 25 gals/inch

Timer Floats:

450 gpd ÷ 25 gals/in = 18 inches between **Timer** ON & Off float positions or

Simple Demand Floats:

102 gals Min Dose / 25 gals/in = 4 inches between ON float and OFF floats