



Sand Filter and Pressure Distribution Systems

GPM and TDH calculations

Required Hydraulic (Head) Calculations for level sites where all lateral piping is the same elevation. Calculate the pump flow rate (gpm) and the total dynamic head (TDH). You may need the help of a consultant. Sloping sites may require a consultant's calculations to verify uniform distribution throughout the system.

Fill in the blanks:

A. HOW TO CALCULATE THE PUMP FLOW RATE

_____ (N) = Number of 1/8" holes

0.43 gpm (R) = Discharge rate per hole

_____ gpm = (N) X (R) = the pump flow rate

B. HOW TO CALCULATE THE TOTAL DYNAMIC HEAD (TDH)

Static Head: The elevation difference from the low water level in the tank (pump off) to the laterals. (Pump off approximately 24" below top of tank.)

(a) _____ feet

Friction Head: Friction losses in the piping (refer to tables).

Length of transport pipe = (L) _____ feet

Friction loss (see table) = (F) _____ feet/100 feet

(b) _____ feet = (L) X (F) divided by 100 feet

Discharge Assembly: Refer to hose and valve assembly tables

(c) _____ feet

System Allowance: Includes distribution piping losses and a residual head discharge at the distribution laterals of five feet. Generally, 10 feet is acceptable for this factor. A higher value may be required.

(d) 10 feet

Other:

(e) _____ feet

ADD (a) + (b) + (c) + (d) + (e) = _____ feet (TDH)

Use (gpm) and (TDH) to select the best pump curve.