$$\frac{P_A}{\gamma_t} + \frac{V_A^2}{2g} + Z_A + h_A - h_I = \frac{P_B}{\gamma_t} + \frac{V_B^2}{2g} + Z_B$$

$$h_A = \frac{P_B}{\gamma_t} + \frac{V_B^2}{2g} + Z_B - \frac{P_A}{\gamma_t} - \frac{V_A^2}{2g} - Z_A + h_I$$

$$\left(\frac{P_B - P_A}{\gamma_t}\right) + \left(\frac{V_B^2 - V_A^2}{2g}\right) + (Z_B - Z_A) + h_I$$

$P_A = -3.50 \text{ lb/in}^2$
$P_B = 25 \text{ lb/in}^2$
$V_A = 7.28 \text{ ft/s}$
$V_B = 15.03 \text{ ft/s}$
$Z_B = 80 \text{ ft}$
$\gamma_t = 64.0224 \text{ lb/ft}^3$
$h_I = 27.27 \text{ ft}$
$g = 32.2 \text{ ft/s}^2$

$$h_A = \left(\frac{25 - (-3.50)}{64.0224}\left(\frac{144 \text{ in}^2}{\text{ft}^2}\right)\right) + (80 - 0) + \left(\frac{15.03^2 - 7.28^2}{2(32.2)}\right) + 27.27$$

$$= 64.1 + 80 + 2.685 + 27.7$$
$$= 174.485 \text{ ft}$$

Power for the pump

$$P = \frac{h_A \gamma_t Q}{550}$$

$$P = \frac{(174.485)(64.0224)(0.50)}{550} = \frac{5585.47}{550} = \boxed{10.155 \text{ hp}}$$