4.2.3 Unconfined with uniform recharge

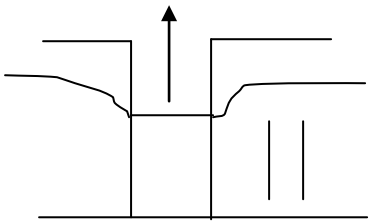
$$dQ = -2\pi r dr W$$

Integrating

r $\rightarrow$ o, Q = Q_w

$$Q = -\pi r^2 W + C$$

$$r \rightarrow 0, Q = Qw \therefore Q = -\pi r^2 w + Qw$$



$$-2\pi r K h \frac{dh}{dr} = -\pi r^2 w + Q_w$$

Integrating

n = h_o at r = r_o

$$h^2{}_o - h^2 = \frac{W}{2K}\left(r^2 - r_o{}^2\right) + \frac{Q_w}{\pi K}\ln\frac{r_o}{r}$$

$$y \quad Q = \pi K\left(\frac{h_o{}^2 - h_w{}^2}{\ln\left(r_o / r_w\right)}\right)$$

radius of influence = f (well pumpage and recharge rate)