

$$\Delta V/\Delta t = P_n + S_i + G_i - ET - S_o - G_o \pm T$$

Groundwater Flow

Darcy's law:

$$G = kA_x s$$

G = groundwater flow rate (cm^3/s)

k = hydraulic conductivity (cm/s)

A_x = cross sect area (cm^2)

s = hydraulic gradient (slope)

Material	Hydraulic conductivity (cm/sec)
Clay	$10^{-9} - 10^{-6}$
Silt, sandy & clayey silts	$10^{-6} - 10^{-4}$
Silty sand, fine sand	$10^{-5} - 10^{-3}$
Well-sorted sand	$10^{-3} - 10^{-1}$
Well-sorted gravel	$10^{-2} - 1$

organic soils

$$2 \times 10^{-7}$$

$$8 \times 10^{-3}$$

Slope: if using degrees, then it is $\sin(\text{degrees})$