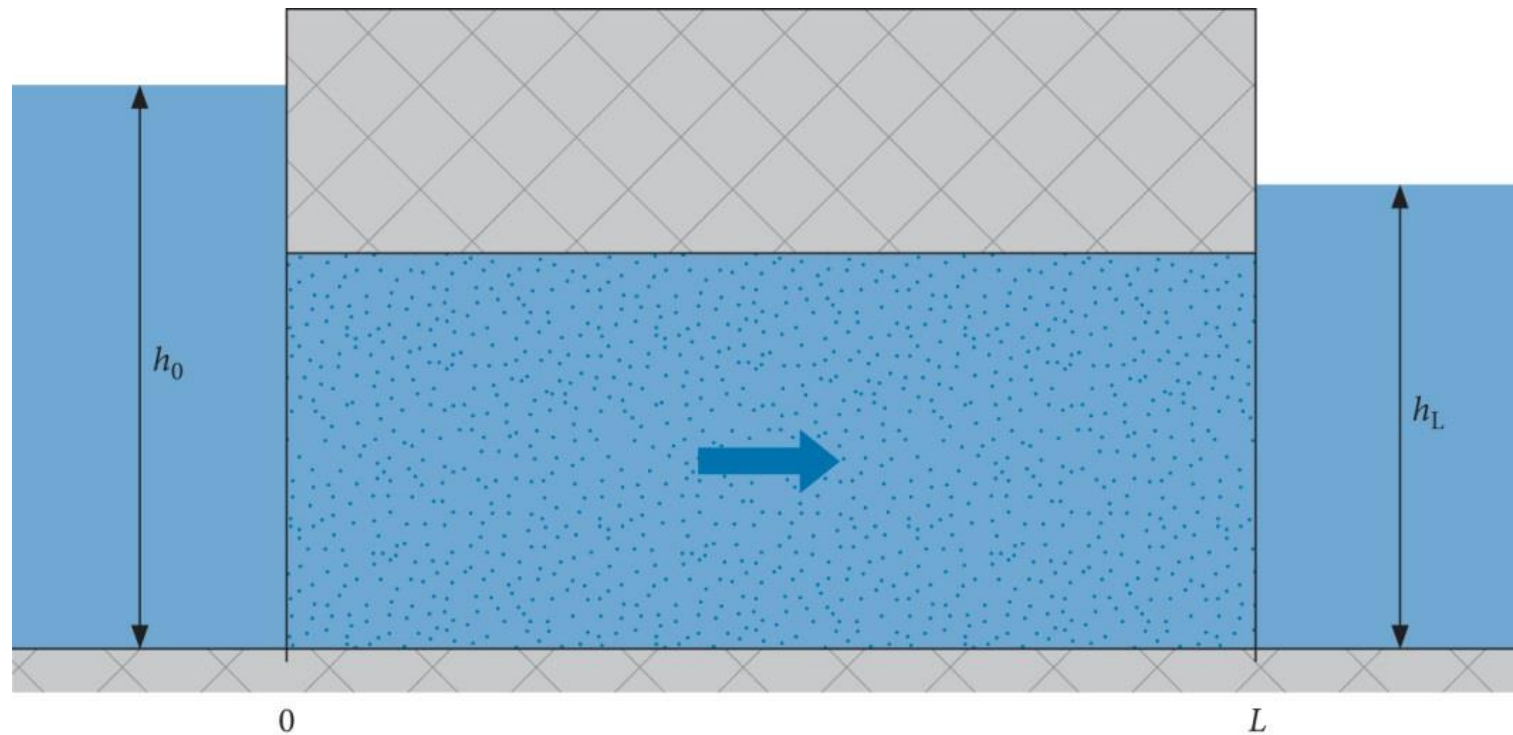


Confined groundwater

<https://www.youtube.com/user/MartinRHendriks/videos>

Horizontal groundwater flow



$$Q = -KA \frac{h_L - h_0}{L}$$

$$Q = -KA \frac{\Delta h}{\Delta x}$$

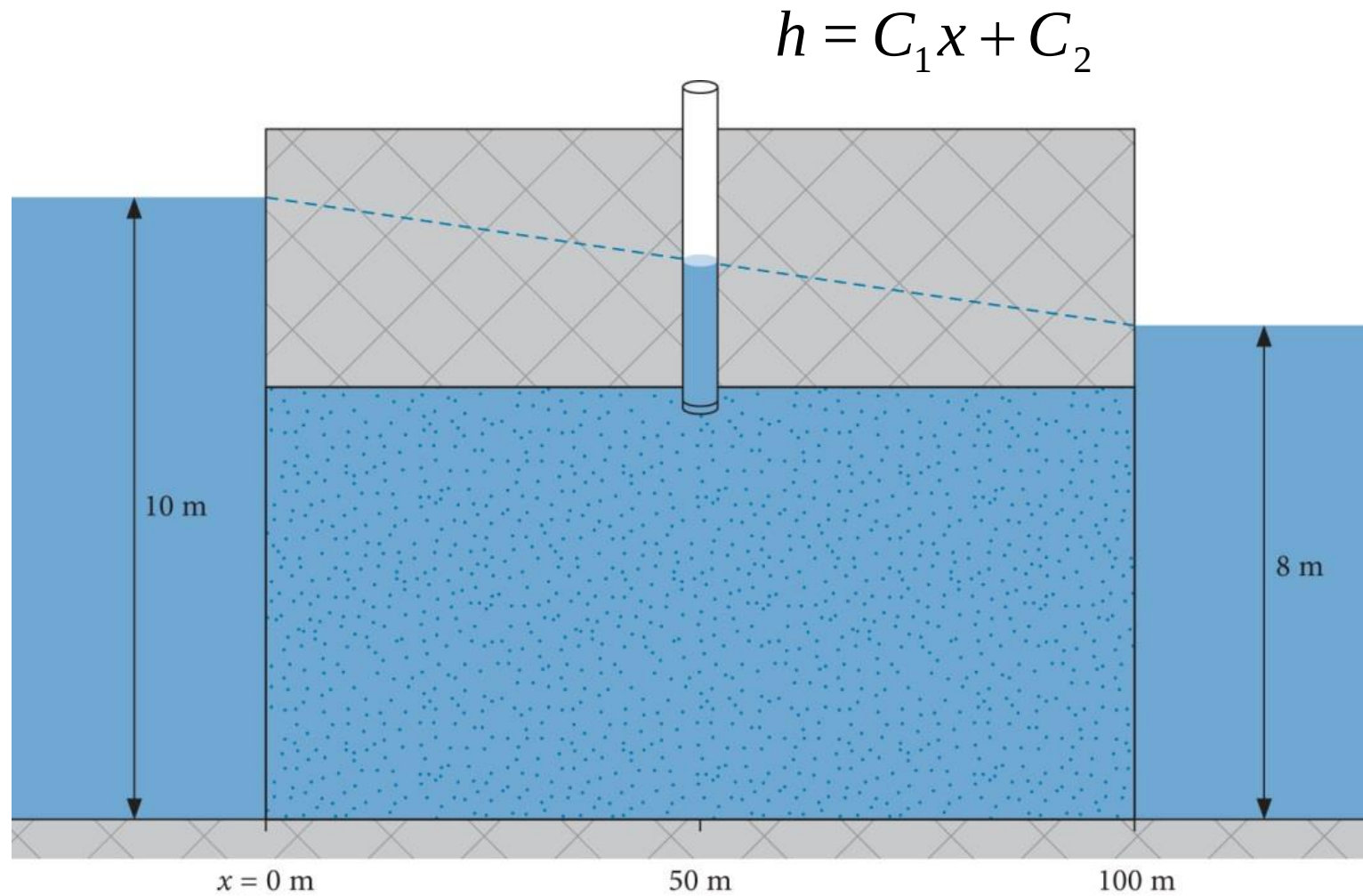
$$Q = -KA \frac{dh}{dx}$$

$$Q = -KDW \frac{dh}{dx}$$

$$Q' = \frac{Q}{W} = -KD \frac{dh}{dx}$$

Confined groundwater

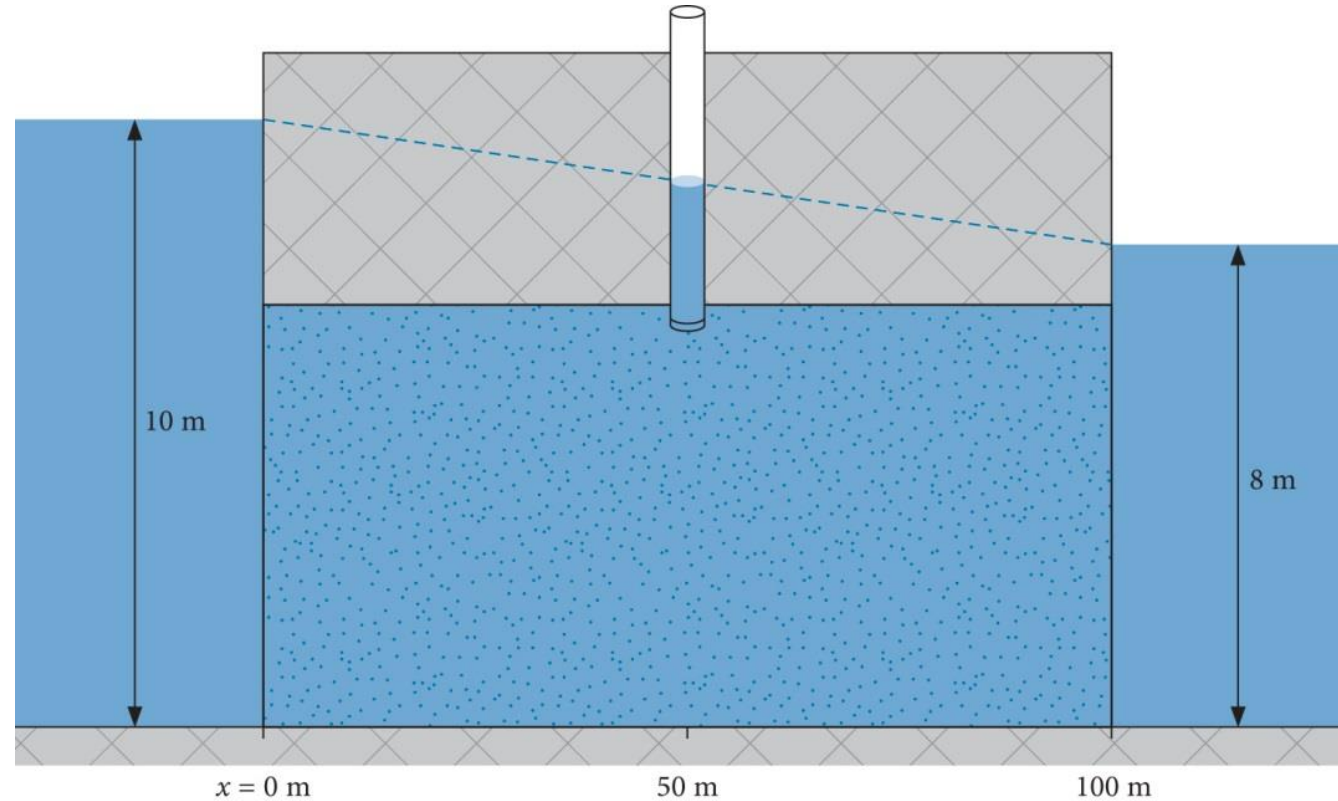
<https://www.youtube.com/user/MartinRHendriks/videos>



Confined groundwater

<https://www.youtube.com/user/MartinRHendriks/videos>

$$Q' = -KD \frac{dh}{dx}$$

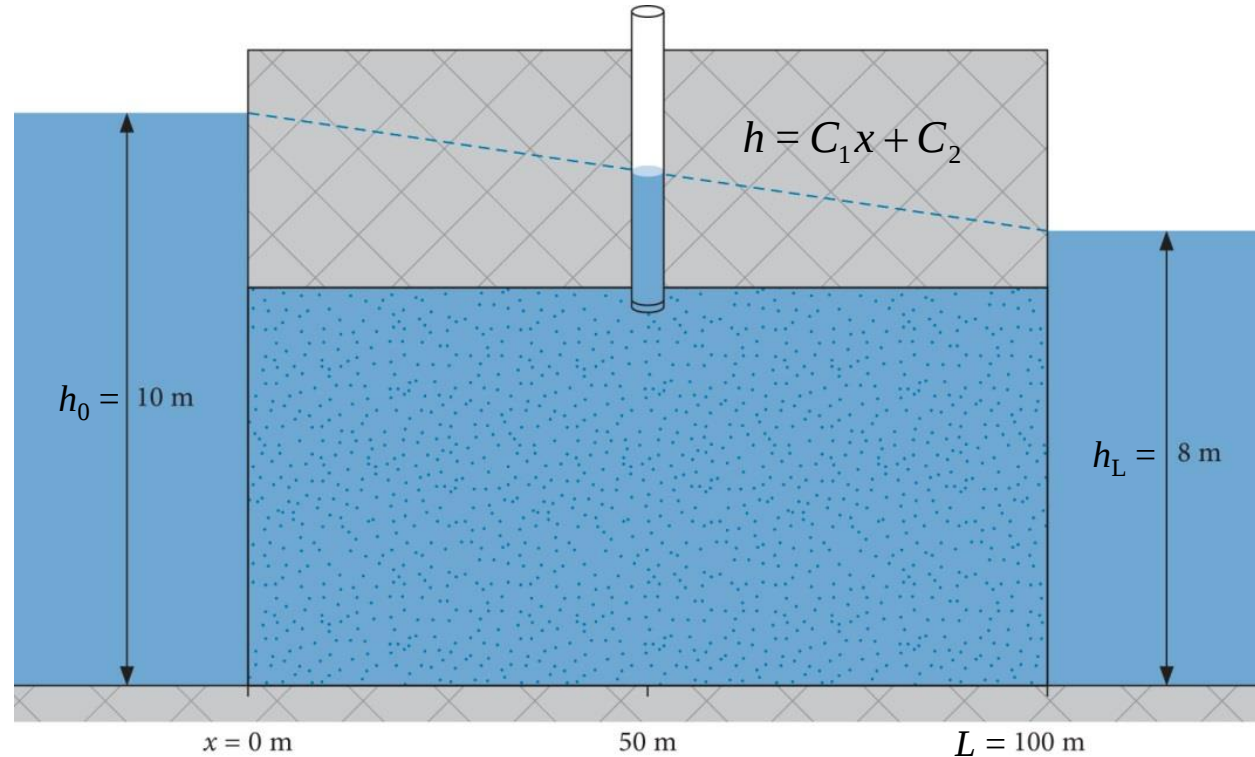


$$Q' = \text{constant} \Rightarrow -KD \frac{dh}{dx} = \text{constant}$$

$$\frac{dh}{dx} = \text{constant} = C_1 \Rightarrow h = C_1 x + C_2$$

Confined groundwater

<https://www.youtube.com/user/MartinRHendriks/videos>



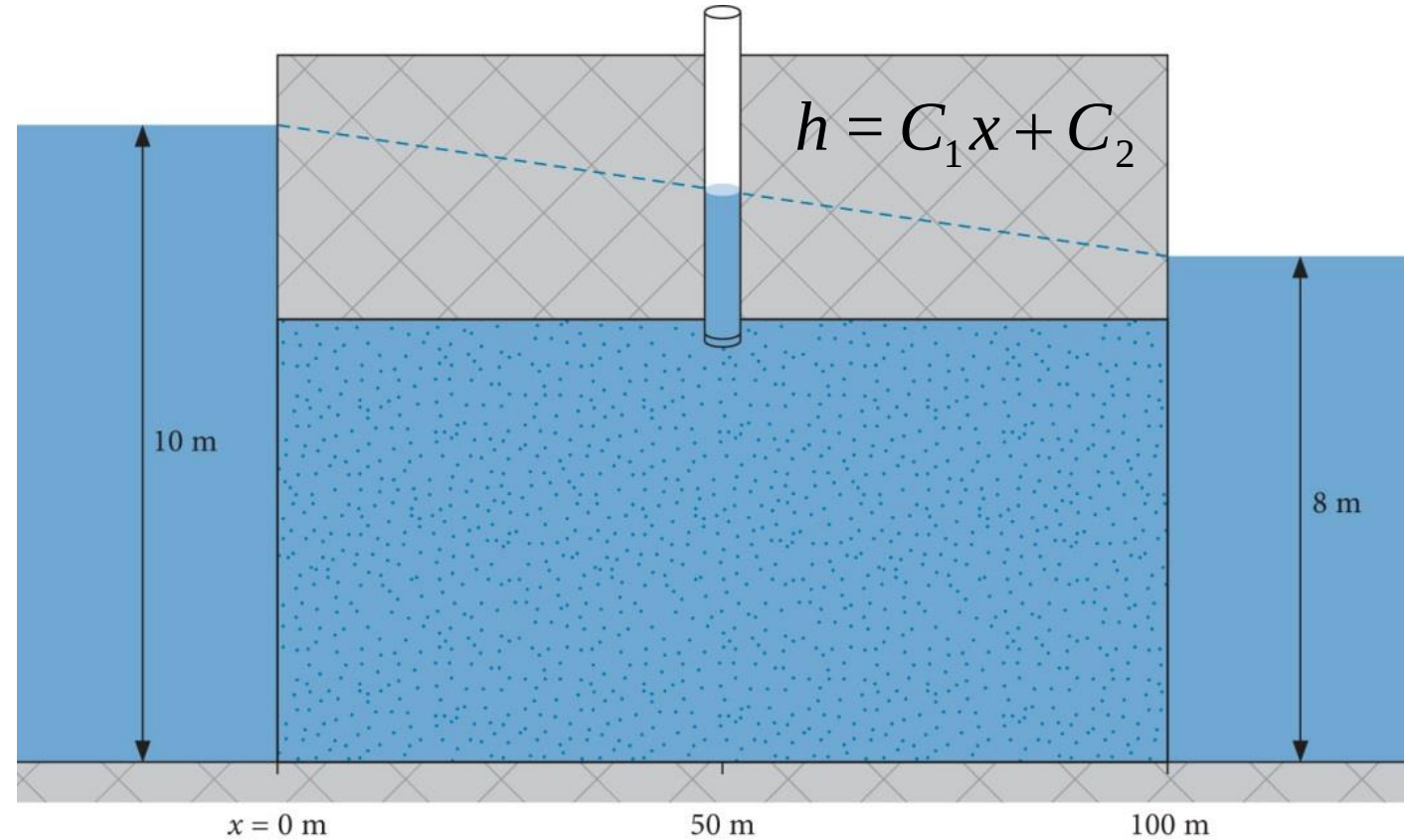
When $x = 0$, then $h = h_0 \Rightarrow h_0 = C_1 \times 0 + C_2 \quad h_0 = C_2 \quad C_2 = h_0$

When $x = L$, then $h = h_L \Rightarrow h_L = C_1 \times L + C_2 = C_1L + h_0 \quad C_1 = \frac{h_L - h_0}{L}$

Inserting the values found for C_1 and C_2 in $h = C_1x + C_2$ gives: $h = \frac{h_L - h_0}{L}x + h_0$

Confined groundwater

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$$h = \frac{h_L - h_0}{L} x + h_0$$

$$h = \frac{8 - 10}{100} x + 10$$