



**Match**

early time  $\Gamma = 0.06$   
 $W(u, \Gamma) = 1$   
 $u_A = 2.5 \times 10^{-2}$  ( $1/4u_A = 10$ )  
 $t = 6 \text{ min}$   
 $s = 0.55 \text{ ft}$   
 $Q = 144.4 \text{ ft}^3/\text{min}$   
 $r = 73 \text{ ft}$   
 $b = 100 \text{ ft}$

late time same  $\Gamma$   
 slide horizontally  
 same  $s = 0.55$   
 $t = 53 \text{ min}$   
 $u_B = 0.25$  ( $1/4u_B = 1$ )

Calculate T S  $K_v$   $K_h$   $S_y$

Early time match results:

$$T = \frac{Q}{4\pi s} W(u_A, \Gamma) = \frac{144.4 \frac{\text{ft}^3}{\text{min}}}{4\pi(0.55\text{ft})} (1) = 20.9 \frac{\text{ft}^2}{\text{min}}$$

$$S = \frac{4u_A T t}{r^2} = \frac{4(2.5 \times 10^{-2}) \left(20.9 \frac{\text{ft}^2}{\text{min}}\right) 6 \text{ min}}{(73\text{ft})^2} = 2 \times 10^{-3}$$

Late time match results:

T .... Same (match by sliding horizontally)

$$S_y = \frac{4u_B T t}{r^2} = \frac{4(0.25) \left(20.9 \frac{\text{ft}^2}{\text{min}}\right) 53 \text{ min}}{(73\text{ft})^2} = 0.21$$

$$K_H = \frac{T}{b} = 2 \times 10^{-1} \frac{\text{ft}}{\text{min}}$$

$$K_V = \frac{\Gamma b^2 K_H}{r^2} = \frac{0.06(100\text{ft})^2 0.2 \frac{\text{ft}}{\text{min}}}{(73\text{ft})^2} = 2 \times 10^{-2} \frac{\text{ft}}{\text{min}}$$



$$u_1 = (r^2 S) / (4 T t) = ((100\text{ft})^2 1 \times 10^{-5}) / (4 \cdot 1 \text{ ft}^2/\text{day} \cdot 10 \text{ day})$$

$$= ((100)^2 \cdot 2.5 \times 10^{-7})$$

$$= 2.5 \times 10^{-3}$$

$W(u)_1 \sim 5.44$

$$s_1 = (Q W(u)) / (4\pi T) = (40 \text{ ft}^3/\text{day} \cdot 5.44) / (4 \cdot 1 \text{ ft}^2/\text{day})$$

$$= 5.44 \cdot 3.183 \text{ ft}$$

$$s_1 = 17.3 \text{ ft}$$

$$u_2 = ((500)^2 \cdot 2.5 \times 10^{-7})$$

$$= 6.25 \times 10^{-2}$$

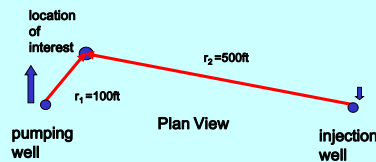
$W(u)_2 \sim 2.34$

$$s_2 = 2.34 \cdot -3.183 \text{ ft}$$

$$s_2 = -7.45 \text{ ft}$$

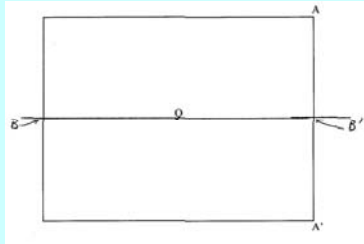
**TOTAL s = 9.85 ft**

$T = 1 \times 10^6 \text{ ft}^2/\text{day}$   
 $S = 1 \times 10^{-5}$   
 $Q @ r_1 = 40 \text{ ft}^3/\text{day}$   
 $Q @ r_2 = -40 \text{ ft}^3/\text{day}$   
 What is the drawdown at the location of interest after 10 days?

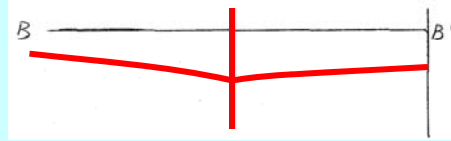




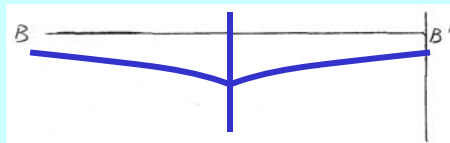
For the following situation with pumping well Q make your qualitative estimates of the relative drawdown.



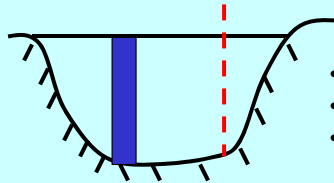
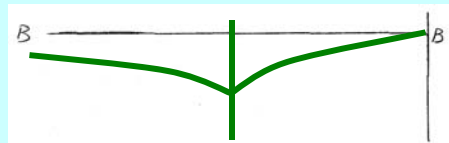
Sketch the cone of depression due to pumping of well Q assuming A-A' is a no flow boundary



Sketch the cone of depression due to pumping of well Q assuming aquifer is infinite



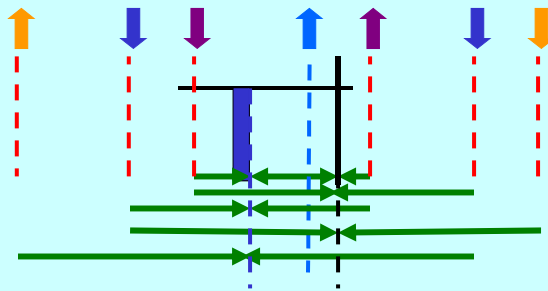
Sketch the cone of depression due to pumping of well Q assuming A-A' is a constant head boundary



- multiple boundaries require multiple reflections
- reflect image wells also
- each boundary should be drawn to infinity and all reflections made

recharge opposite sign

no-flow same sign



etc etc until the addition is insignificant at the time of interest

