Surficial Aquifer Drawdown - 22,304 ft from well pumping 1,000 gpm - Basecase

$s_1 = (Q_2/2\pi(T_1 + T_2))(\ln(r_e/r)-(K_0(\beta) - K0(\beta\varepsilon)I0(\beta)/I0(\beta\varepsilon)))$

Parameter	Value	Units
Time since beginning of pumping (t)	4.0	years
Radial distance from Lower Floridan aquifer pumping well (r)	22304	feet
Transmissivity of surficial aquifer (T_1)	1,500	ft^2/day
Specific Yield of surficial aquifer (S_1)	0.30000	
Transmissivity of Upper Floridan aquifer (T_2)	18,585	ft^2/day
Stortivity of Upper Floridan aquifer (S_2)	0.00115	
Hydraulic conductivity of confining unit (K')	1.00E-04	ft/day
Thickness of confining unit (b')	325	feet
$\nu_1 = T_1/S_1$	5,000	ft^2/day
$\nu_2 = T_2/S_2$	16,160,870	ft^2/day
$\nu_\nu = 2\nu_1\nu_2/(\nu_1 + \nu_2)$	9,997	ft^2/day
$r_e = 1.5(\nu_\nu t)^{1/2}$ not used, chosen to be 44,608 ft	44,608	feet
$B_1 = (T_1/(K'/b'))^{1/2}$	69,821	feet
$B_2 = (T_2/(K'/b'))^{1/2}$	245,767	feet
$\beta_1 = r/B_1$	0.31944452	
$\beta_2 = r/B_2$	0.09075275	
$\beta^2 = \beta_1^2 + \beta_2^2$	0.11028086	
β	0.33208563	
$\beta\varepsilon_1 = re/B_1$	0.63888905	
$\beta\varepsilon_2 = re/B_2$	0.18150550	
$\beta\varepsilon^2 = \beta\varepsilon_1^2 + \beta\varepsilon_2^2$	0.44112346	
$\beta\varepsilon$	0.66417126	
$\ln(r_e/r)$	0.693	
$K_0(\beta)$	1.280	
$K_0(\beta\varepsilon)$	0.699587159	
$I_0(\beta\varepsilon)$	1.113358811	
$I_0(\beta)$	1	
$\delta 1 = T1/T2$	0.08071025	

Upper Floridan Aquifer Pumping (Q_2 in gpm)	$Q_2/2\pi(T_1+ T_2)$ (ft)	Surficial Aquifer Drawdown (s_1 in feet)	Floridan Aquifer Drawdown (s_2 in feet)
1000	1.52549067	9.00E-02	1.14