

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

$s_1 = (Q_2/2\pi(T_1 + T_2))(\ln(r_e/r) - K_0(\beta) - K_0(\beta\epsilon)I_0(\beta)/I_0(\beta\epsilon))$			Upper Floridan Aquifer	$Q_2/2\pi(T_1 + T_2)$	Surficial Aquifer	Floridan Aquifer
Parameter	Value	Units	Pumping (Q_2 in gpm)	(ft)	Drawdown (s_1 in feet)	Drawdown (s_2 in feet)
Time since beginning of pumping (t)	4.0	years	1000	2.45115841	1.51E-01	1.91
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)	11,000	ft ² /day				
Storativity of Upper Floridan aquifer (S_2)	0.000005					
Hydraulic conductivity of confining unit (K')	1.00E-04	ft/day				
Thickness of confining unit (b')	325	feet				
$v_1 = T_1/S_1$	5,000	ft ² /day				
$v_2 = T_2/S_2$	2,200,000,000	ft ² /day				
$v_v = 2v_1v_2/(v_1 + v_2)$	10,000	ft ² /day				
$r_e = 1.5(v_v t)^{1/2}$ not used, chosen to be 44,608 ft	44,608	feet				
$B_1 = (T_1/(K'/b'))^{1/2}$	69,821	feet				
$B_2 = (T_2/(K'/b'))^{1/2}$	189,077	feet				
$\beta_1 = r/B_1$	0.31944452					
$\beta_2 = r/B_2$	0.11796271					
$\beta^2 = \beta_1^2 + \beta_2^2$	0.11596000					
β	0.34052901					
$\beta\epsilon_1 = re/B_1$	0.63888905					
$\beta\epsilon_2 = re/B_2$	0.23592542					
$\beta\epsilon^2 = \beta\epsilon_1^2 + \beta\epsilon_2^2$	0.46384001					
$\beta\epsilon$	0.68105801					
$\ln(r_e/r)$	0.693					
$K_0(\beta)$	1.257					
$K_0(\beta\epsilon)$	0.680809207					
$I_0(\beta\epsilon)$	1.119365277					
$I_0(\beta)$	1					
$\delta_1 = T_1/T_2$	0.136363636					