

GLY 5826

Assignment 2:

1. Read Chapters 1 and 2.
2. Describe Q , q , K , T , b , Darcy's law (in both the K and T forms), and mean pore water velocity. Include dimensions where appropriate using M , L , T for mass, length, and time.
3. If the Biscayne Aquifer has a transmissivity of 10^6 gpd/ft (gallons per day per foot) and the seaward gradient is 10^{-4} , what is the discharge to the sea (in gallons per day) over 20 miles of beach? Assume no pumping and no impact of salt water intrusion.
4. A sand-filled column is aligned so that the right end is at an elevation (relative to a reference) of 2 m and the left end is at an elevation of 1m. A tube connected to the right end is connected to a reservoir in which the free water surface is maintained at an elevation of 3 m while a tube connected to the left end is connected to a reservoir maintained at 2.5 m. Draw a diagram of the physical system and next to that draw a potential diagram with z on the vertical axis and h on the horizontal axis. Include lines for the elevation, pressure, and total head on the graph.