



Demonstrating Drawdown

Student Name: _____

Class: _____

Object: Demonstrate drawdown and understand the consequences of this action.

Time Needed: 10 - 15 minutes

Simulator Conditions: Slide the simulator aquarium pump so that the full amount of flow is being delivered to the recharge area (slide pump to the right). Make sure that the aquifer compartment drain valve at the bottom of the simulator's back water reservoir is closed. Make sure the stream drain valve is open. Make sure the lake drain valve is closed.

Materials needed: color dye; pipette; large syringe

Procedure #1:

1. **Drawdown** caused by well pumping can alter the natural groundwater flow, sometimes reversing the direction of natural groundwater flow. This can be demonstrated with the simulator.
2. Empty the large syringe of water and depress it (squeeze out all the air) and place it into well #2.
3. Add dye to the sand below well #3. As this dye starts to move downward through the sand, quickly note how slow it moves.
4. Then at a moderate pace, use the syringe to begin drawing water into well #2 (simulating well pumping). Below, make observations of what happens to the dye.

Observations:

Question:

- A. If you were a homeowner using well #3 to obtain domestic water and your neighbor had well #2 to obtain water to constantly water his/her lawn and fill his/her swimming pool, why might your well run dry?

