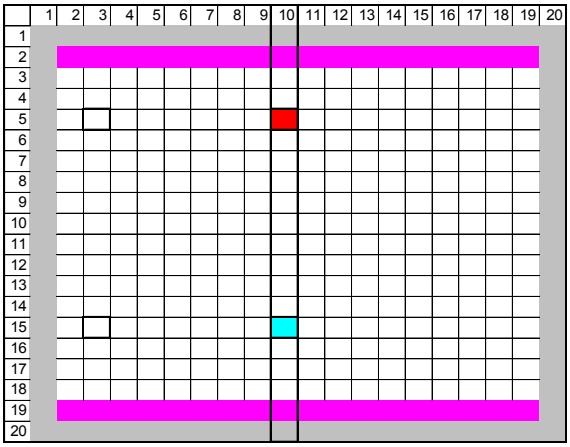
CIVE 7332 Project #4

Casing Failure Simulation

Use the USGS-MOC model to simulate a casing failure in an injection well for a radioactive waste. Use the aquifer depicted in the lecture. The simulation time is 200 years. The typical radioactive material found in NORM is radium, use the half life of radium in the model to account for decay during transport.

Use a 20 x 20 grid with:
Δx = 500m(1640 ft);
Δy = 200m (656 ft).;
K = 16.6 m/day (54.0 ft/day) ;
a_L=50m (164.0 ft) ;
a_T=5m(16.4 ft); n=0.35;
Q_{drink} = 2. 8 MGD (4.33 cu.ft./sec)

Concentration of Injection Water = 1000 pC/L



You should study the six general cases described in lecture. From your results, determine a configuration that is the most protective of the water quality in the production well over the 200 year simulation period.

You should produce a very brief report presenting your simulation results and your interpretation of the results. Remember, edit your output files and only show relevant output for your report.