MODELLING RESULTS

SALT WATER INTRUSION IN MULTILAYERED AQUIFER.

01

Use of scale 100m by 250m.

Addition clay layers into the model.

Usage of qinflow of 600m^3/day

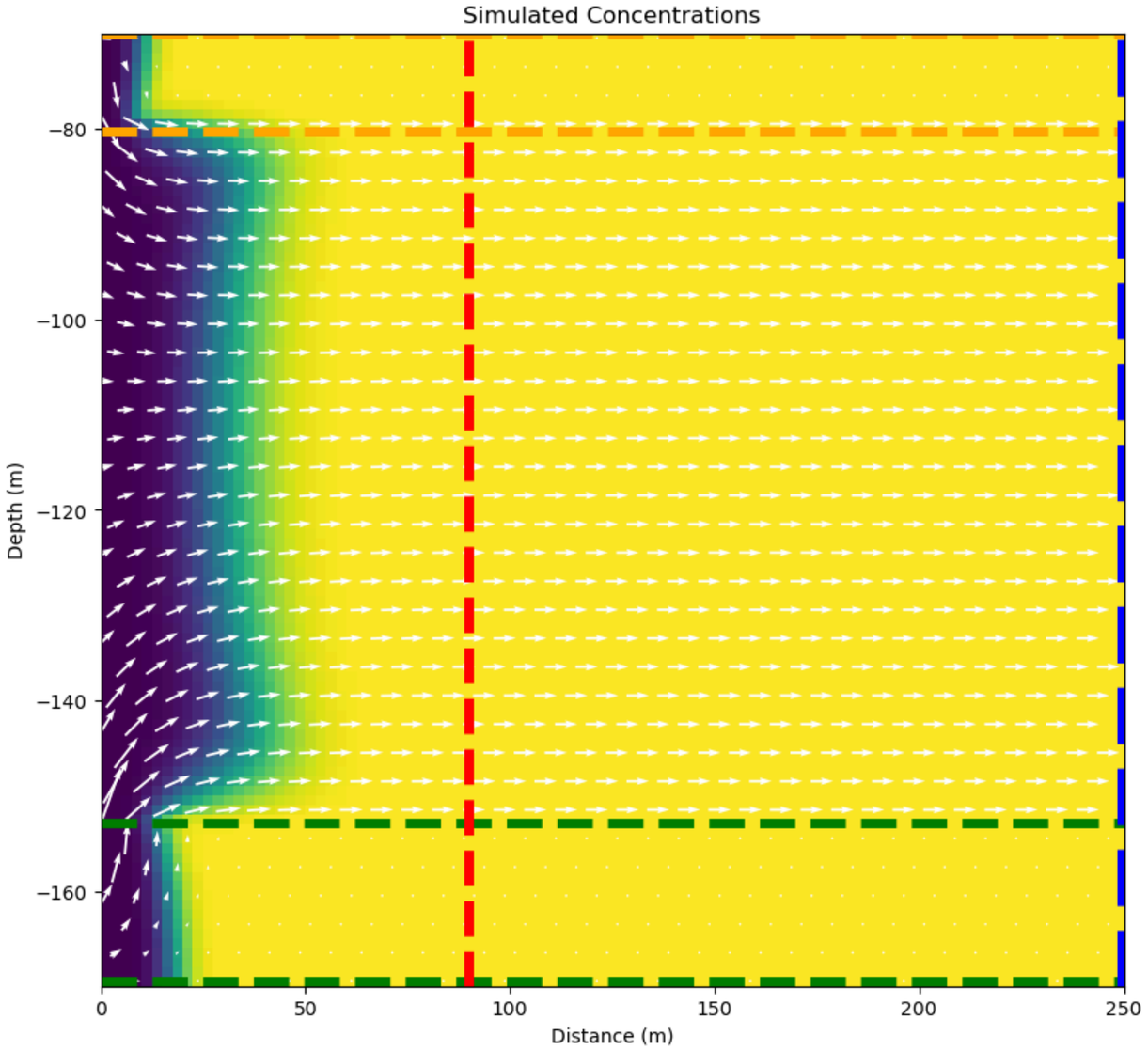
Incorporation of simulated heads as well as hydraulic head distribution.

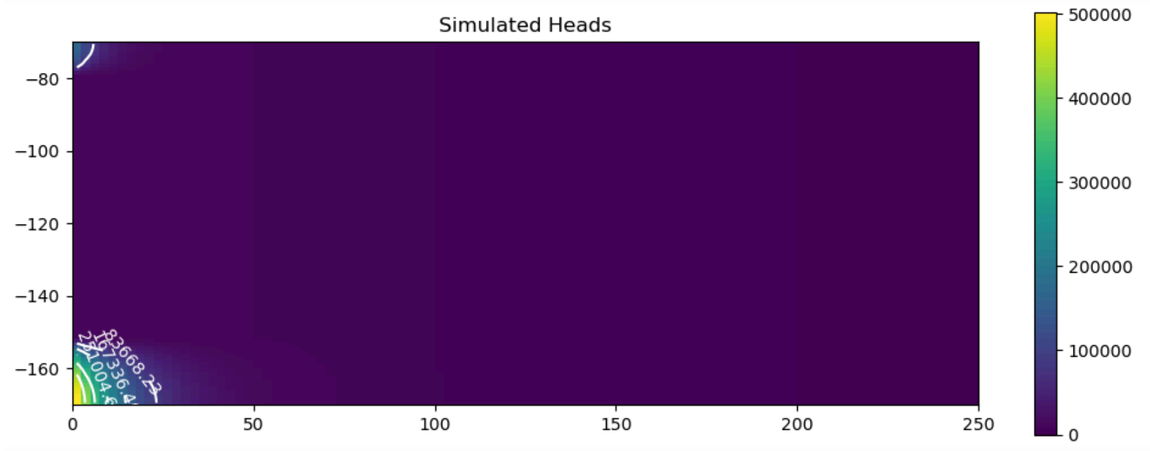
Used two different diffusion coefficient(D) values: low at 0.57042m^2/day and high at 1.692m^2/day-observe if different.

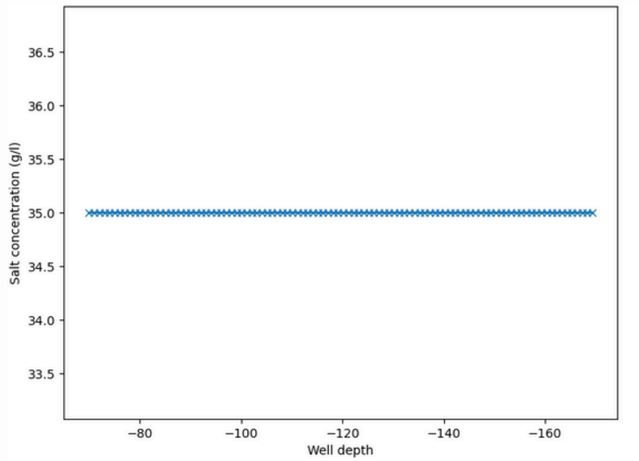
Usage of two hydraulic conductivity (hk) values: METHOD 1 vs METHOD 2.

hk values	hk 1	hk 2	hk 3
METHOD 1	0.000209	0.203	0.000144
METHOD 2	0.8886	864	0.6126

- Model with Method 1's hk (dimension: 100m by 250m, qinflow: 600m³/day Diffusion rate(D): 0.57024)

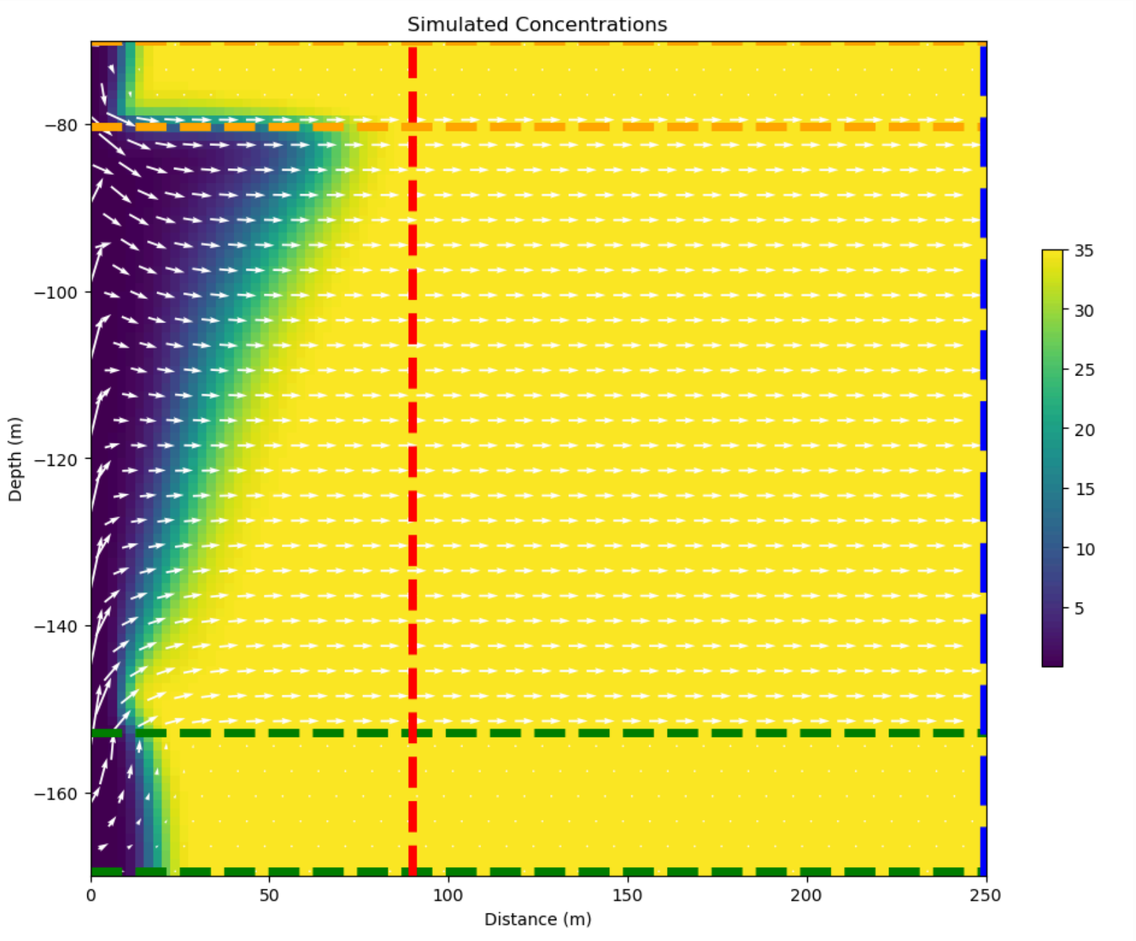


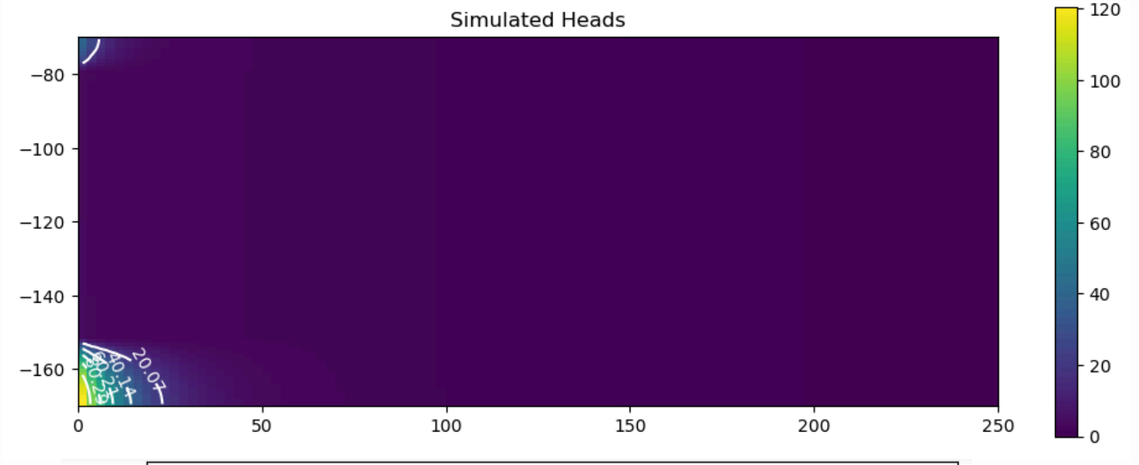


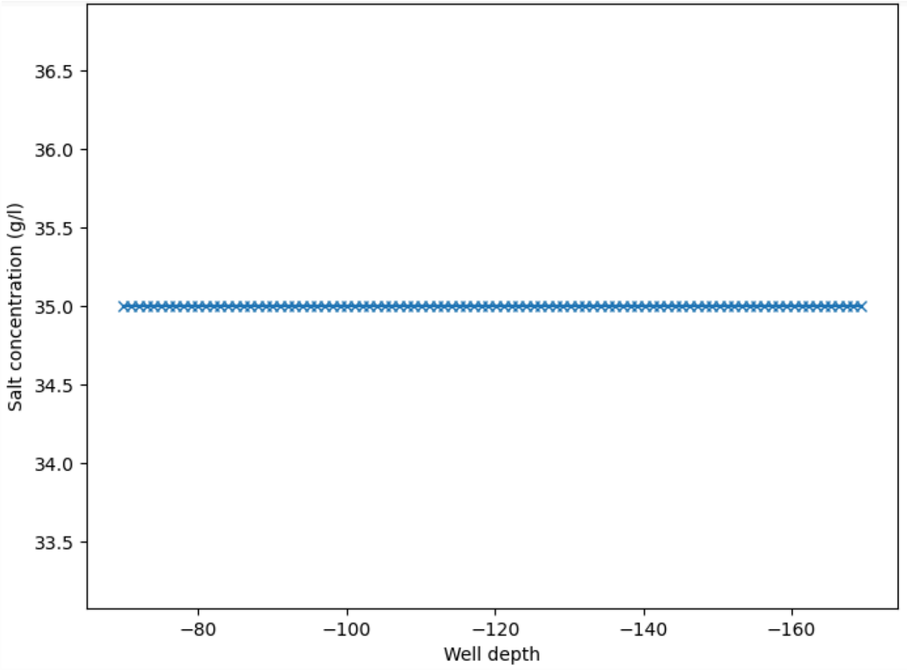


- Salt conentration changes still not visible around the well.
- HIgh head on bottom left side only.

- Model with Method 2's hk(dimension: 100m by 250m, qinflow: 600m³/day Diffusion rate(D): 0.57024)

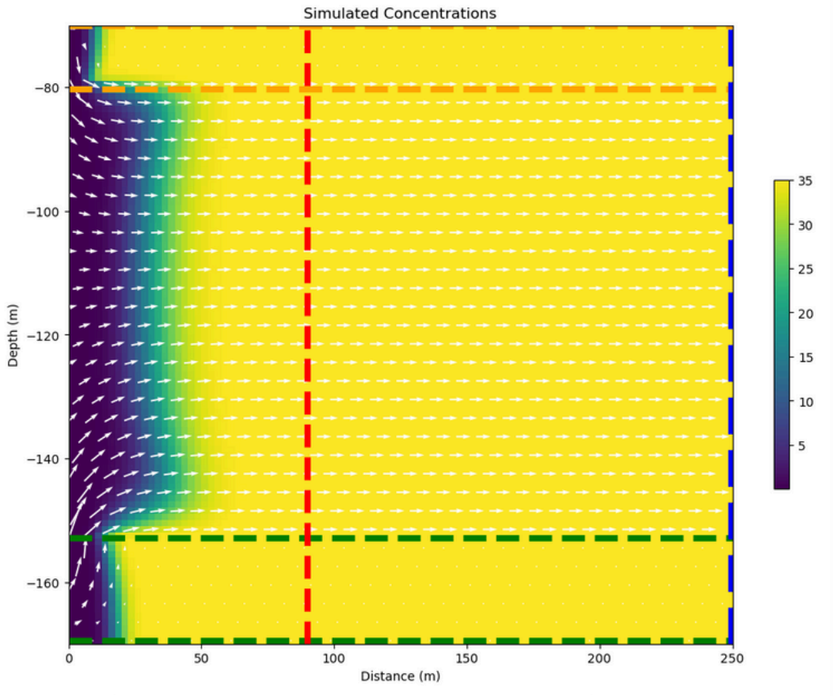


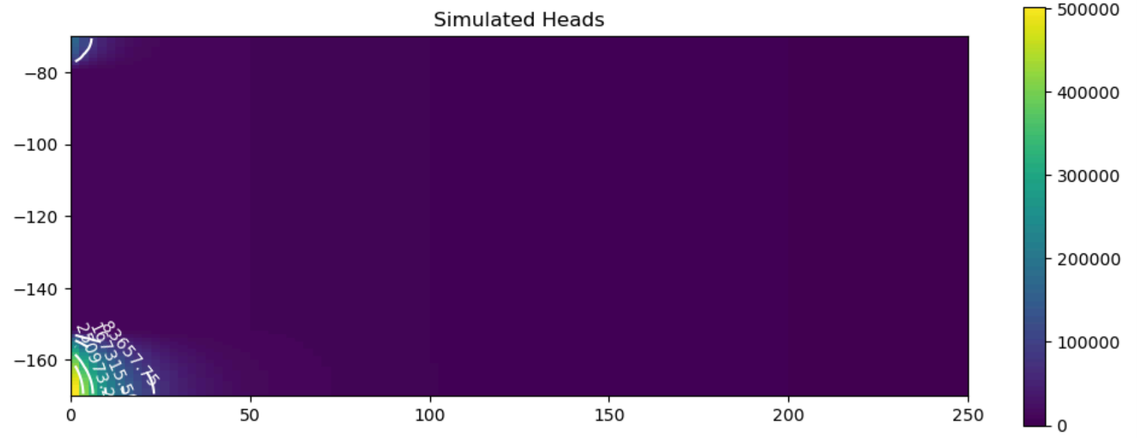


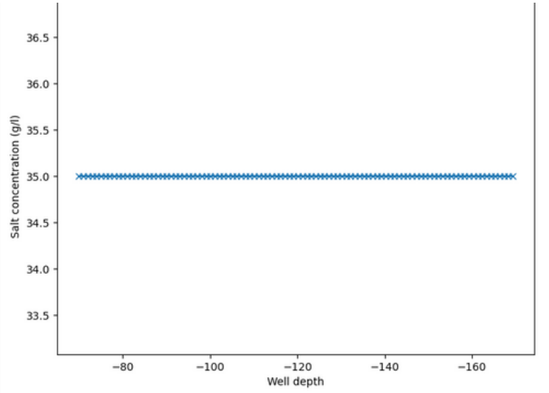


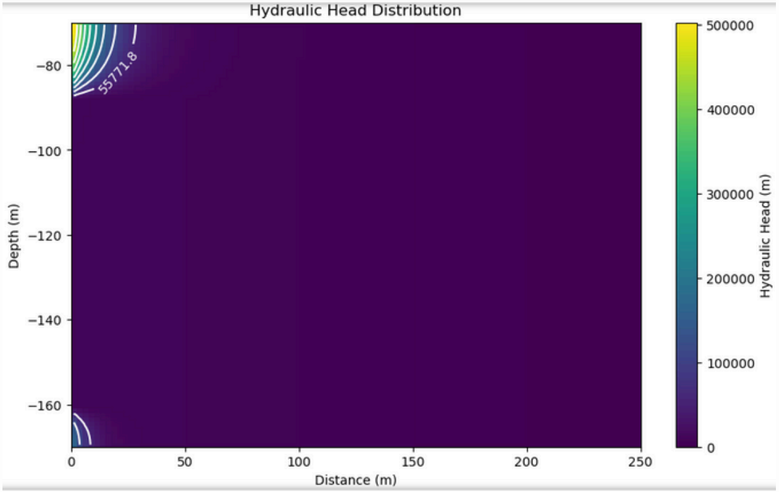
- Salt conentration changes still not visible.
- Very low head.
- Wedge-shaped intrusion.

- Model with Method 1's hk (dimension: 100m by 250m, qinflow: 600m³/day Diffusion rate(D): 1.6992)



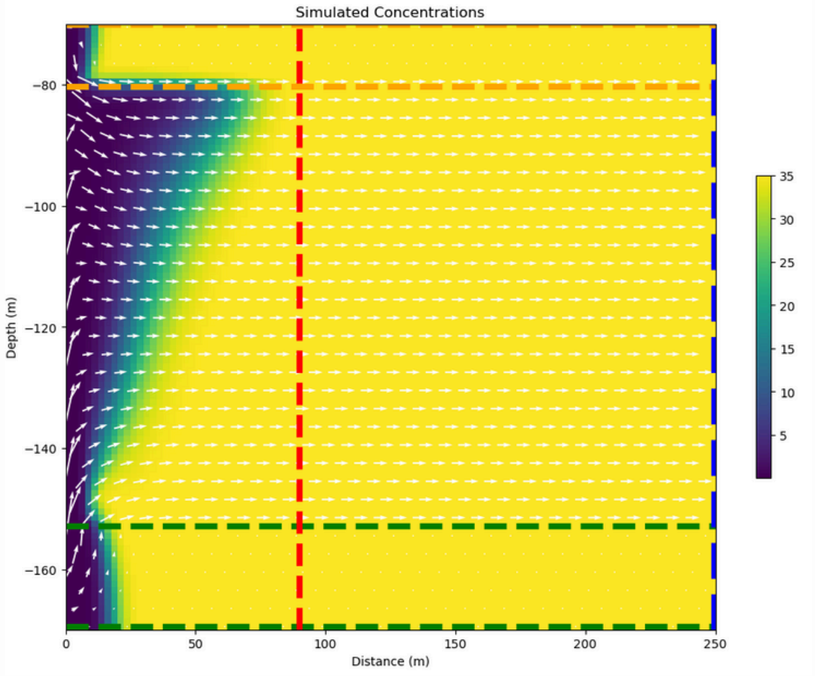


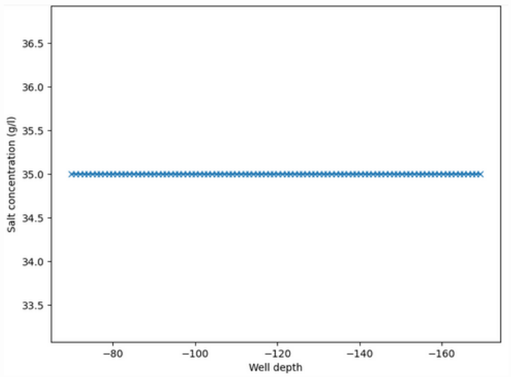


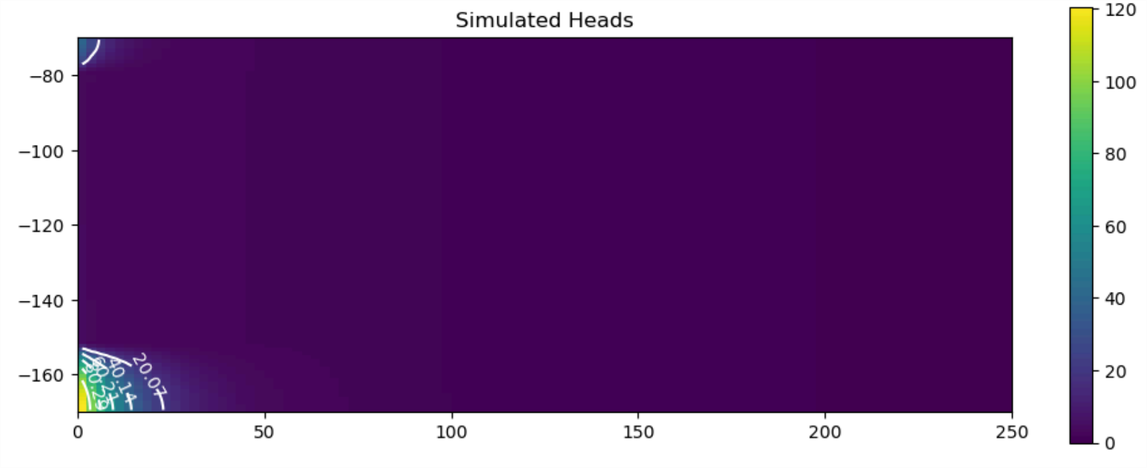


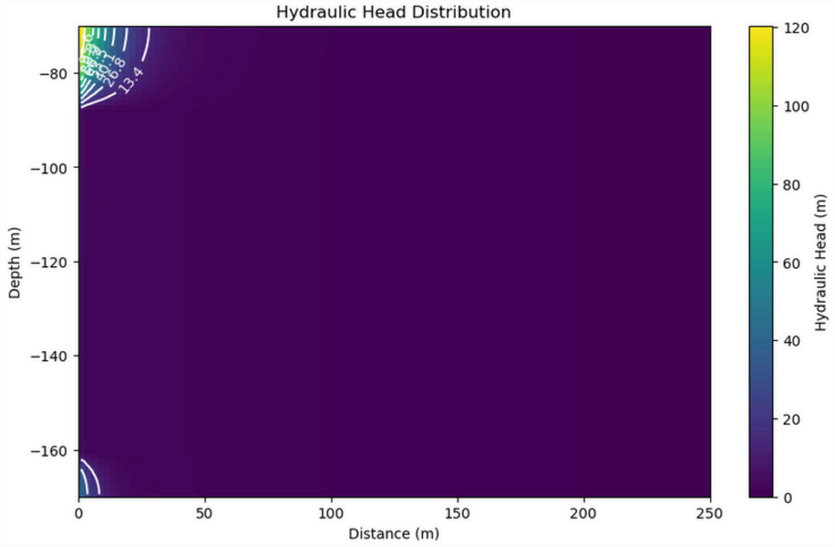
- Very minimal changes with different (D).

- Model with Metthod 2's hk (dimension: 100m by 250m, qinflow: 600m³/day Diffusion rate(D): 1.6992)





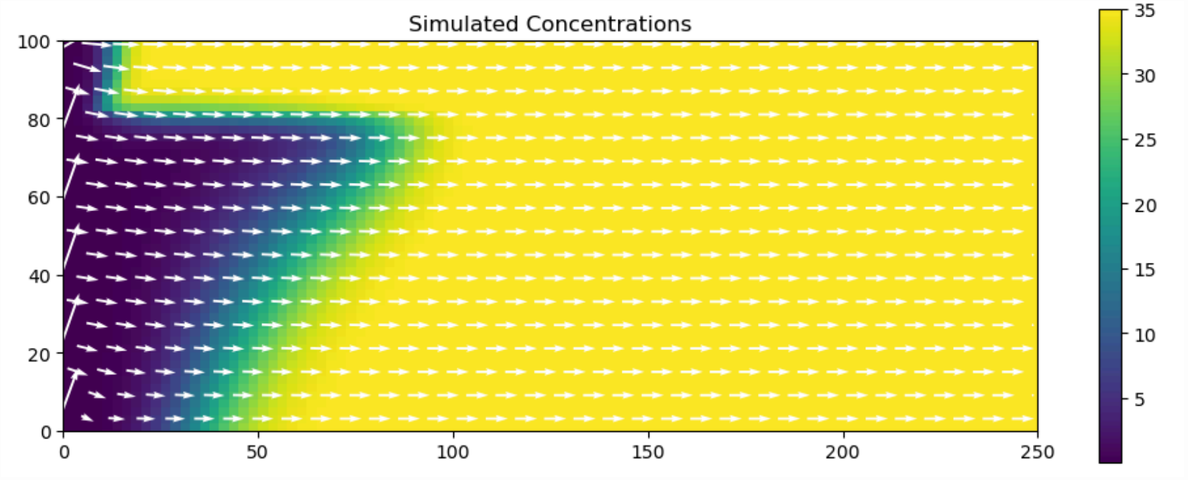


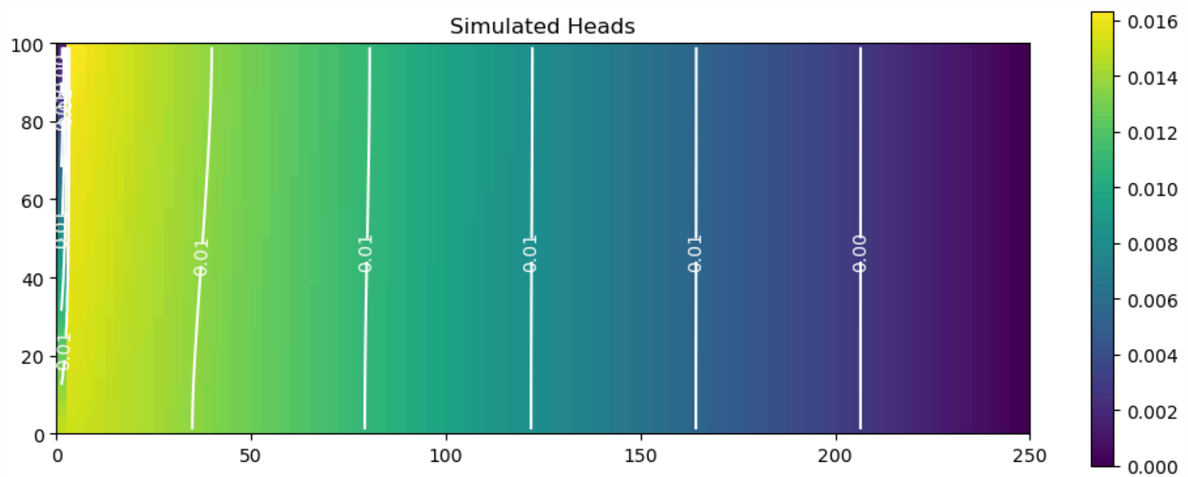


- Very minimal changes with higher (D)
- Head remains low.

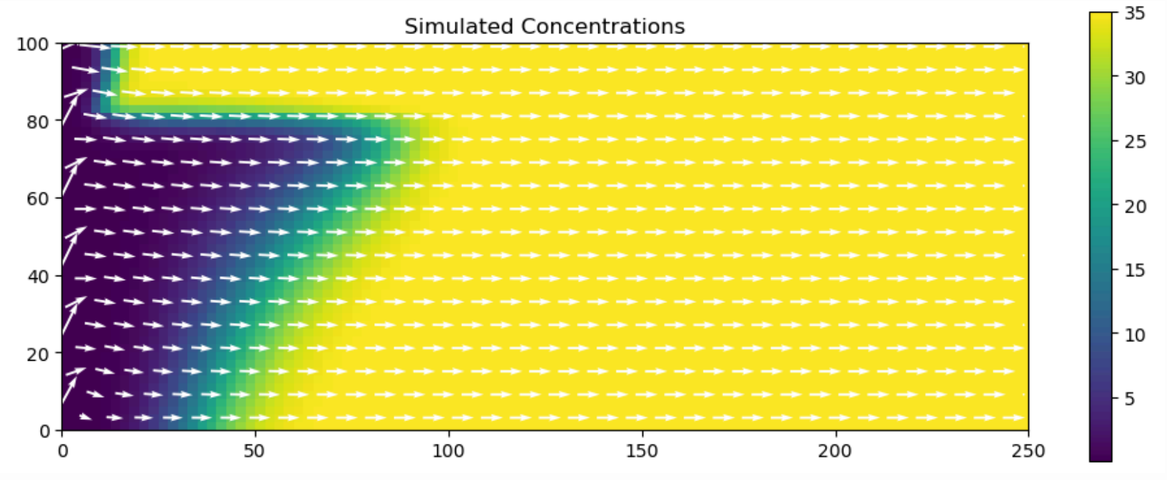
Model without clayey layers.

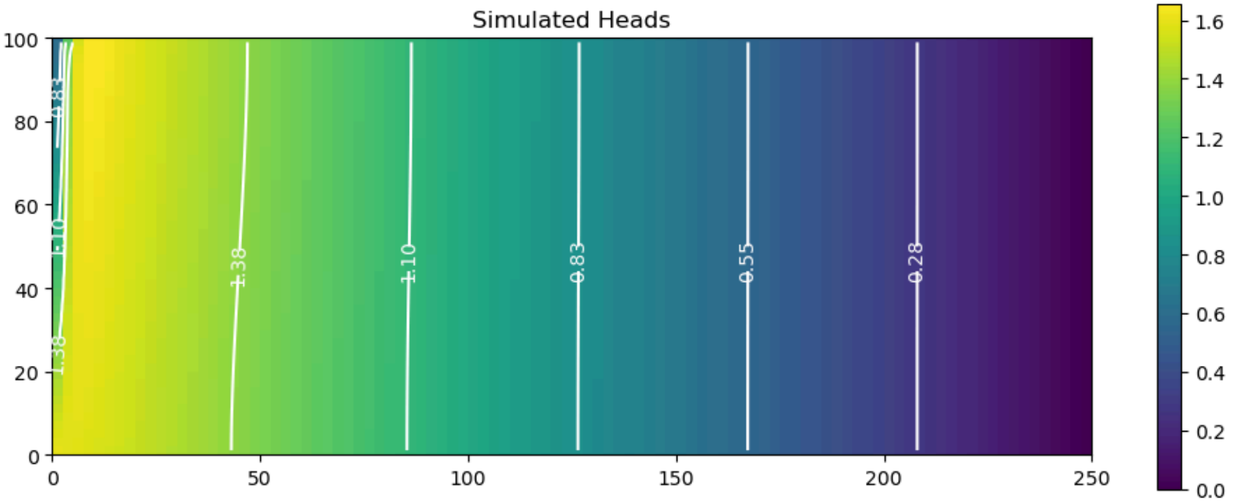
Qinflow of 5.7204m³/day





Qinflow of 600m³/day





NOTES

- A higher diffusion coefficient has little to no effect on SWI.
- Using hydraulic conductivity values given by Method 2 are more effective in visualising wedge-shaped intrusion.
- Anomaly in superior part of the model showing different hk/ different permeability may be due to the version of Python used- needs to be revisited.