**Friends of the Environment Report – Scenarios 1-2**

Groundwater Modelling, HWRS518

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4/21/2020

**Scenario 1: Pre Development model, no seasonality**

Build the base model as described above without the proposed agricultural activity.

* Run the model as steady state with no pumping from the town's well.
* Calculate the flux from the stream to the groundwater
  + Flux: 6313
* Also show a reverse particle track map to identify the source of the water to the stream.

A picture containing monitor, screen, holding, white

Description automatically generated

* Finally, report the water level at the monitoring wells and at the town's well (even though it isn't pumping for this scenario).
  + Town Well: 85.39
  + Monitoring Well 1 [25000,25000]: 83.10
  + Monitoring Well 2 [12500,125000]: 90.17

**Scenario 2: Pre development model with seasonality**

Build the base model as described above without the proposed agricultural activity.

* Run the model as transient for 25 years with no pumping from the town's well. Recharge occurs at a constant rate all year, but ET takes place from April through September (inclusive) at the rate given in the problem description.
* How long does it take for the model to reach a cyclical steady state (annual variations, but no trends)? Use monthly water levels at the monitoring wells to support your conclusion. This is the required 'burn in' time of your model.

A screenshot of a cell phone

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***According to our time series, it reached steady state almost immediately.***