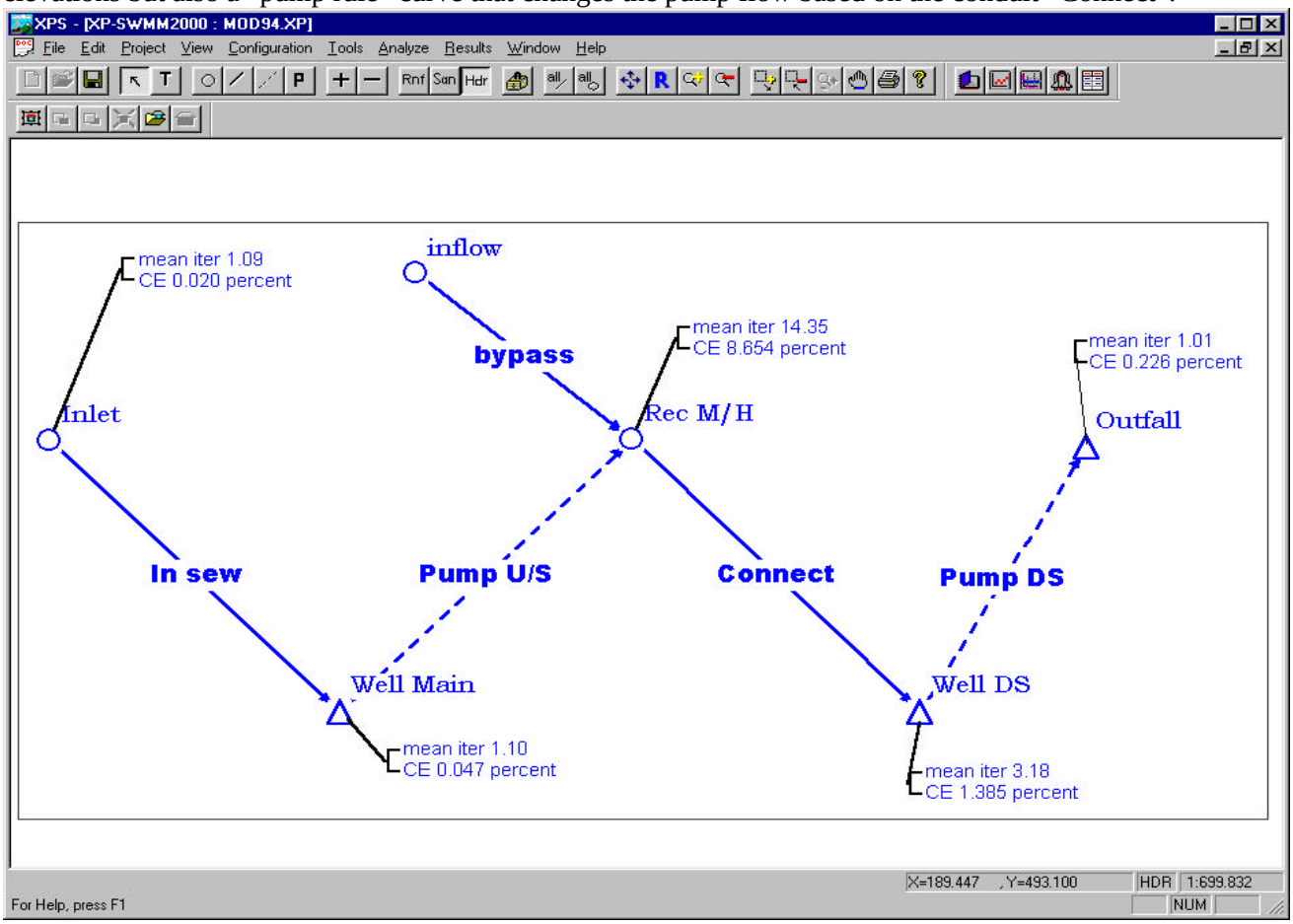
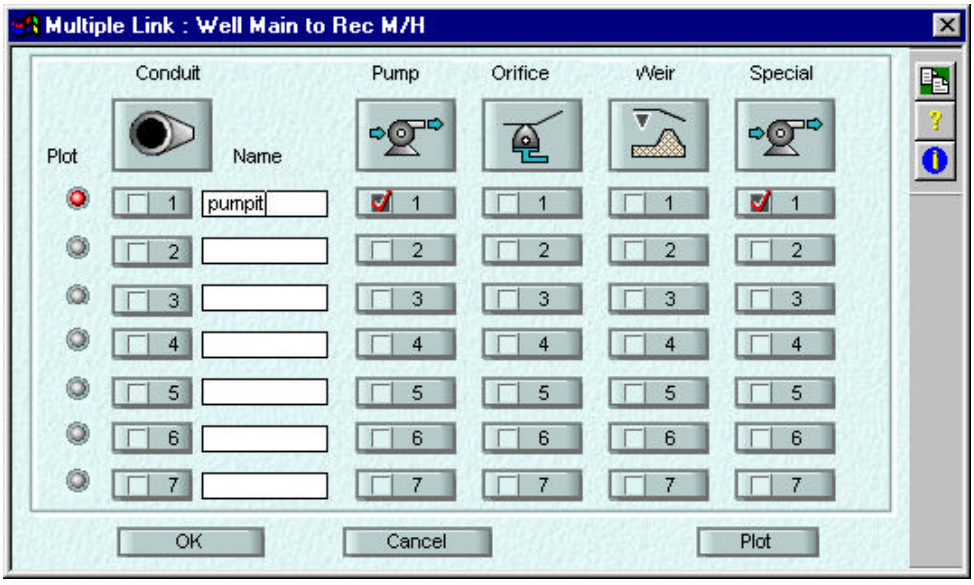
Module 94: Real Time Control based on Flow

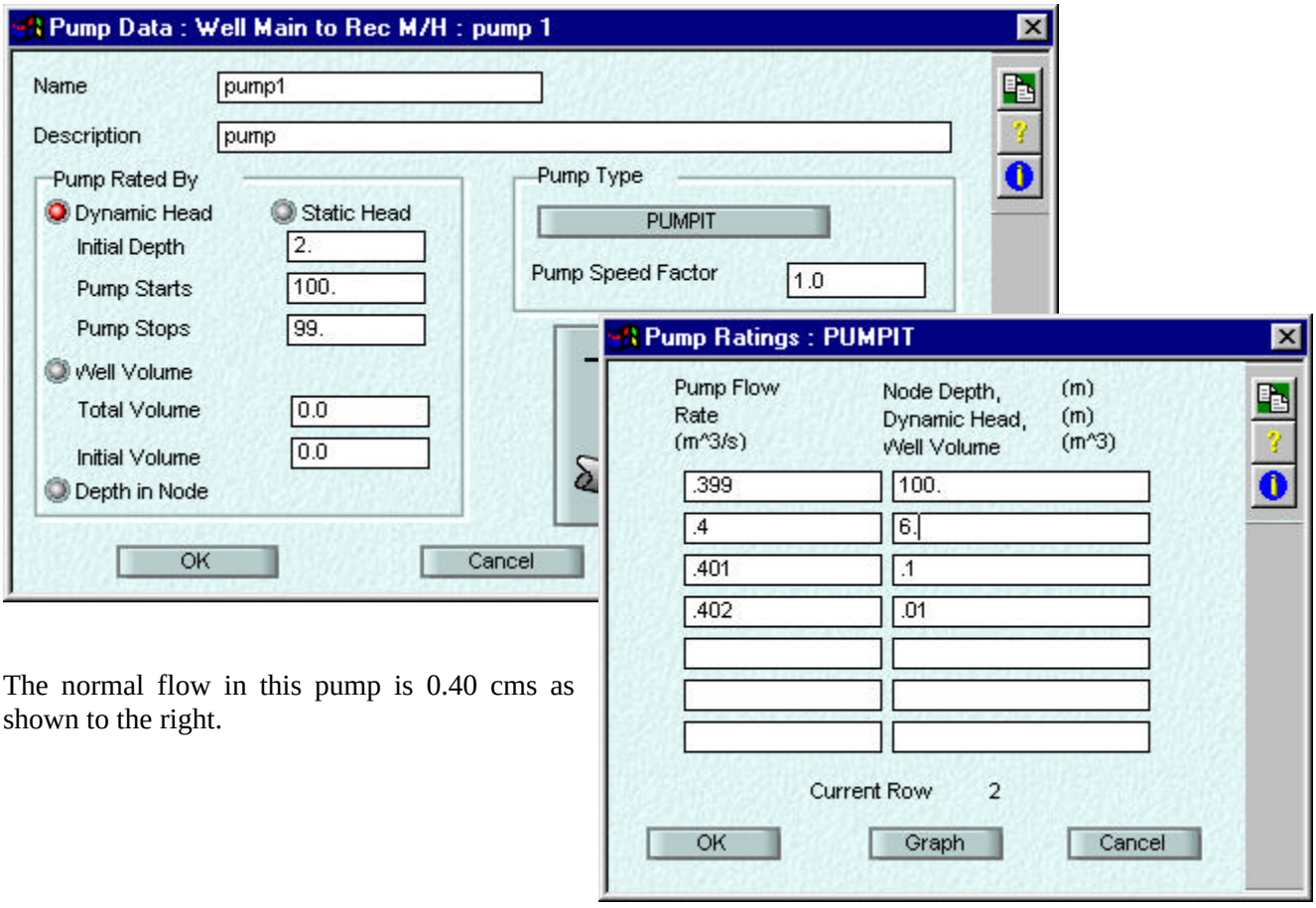
Synopsis

Module 94 shows how to modify the pump flow of a conduit based on the flow in a non-adjacent conduit. In this model the pump "Pump US" is dependent not only on the downstream and upstream node water surface elevations but also a "pump rule" curve that changes the pump flow based on the conduit "Connect".



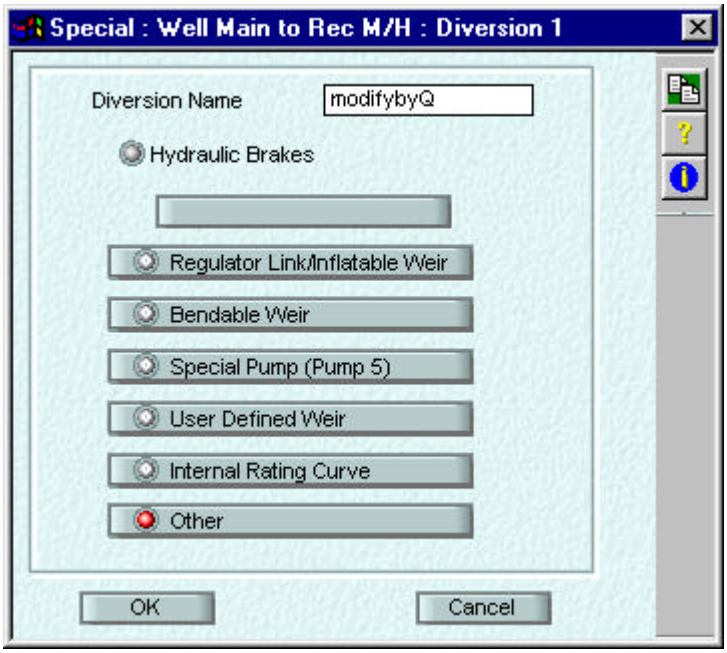
A dynamic pump is entered in the pump dialogs of the multi-conduit link. The "pump rule" is entered in the special conduit list.

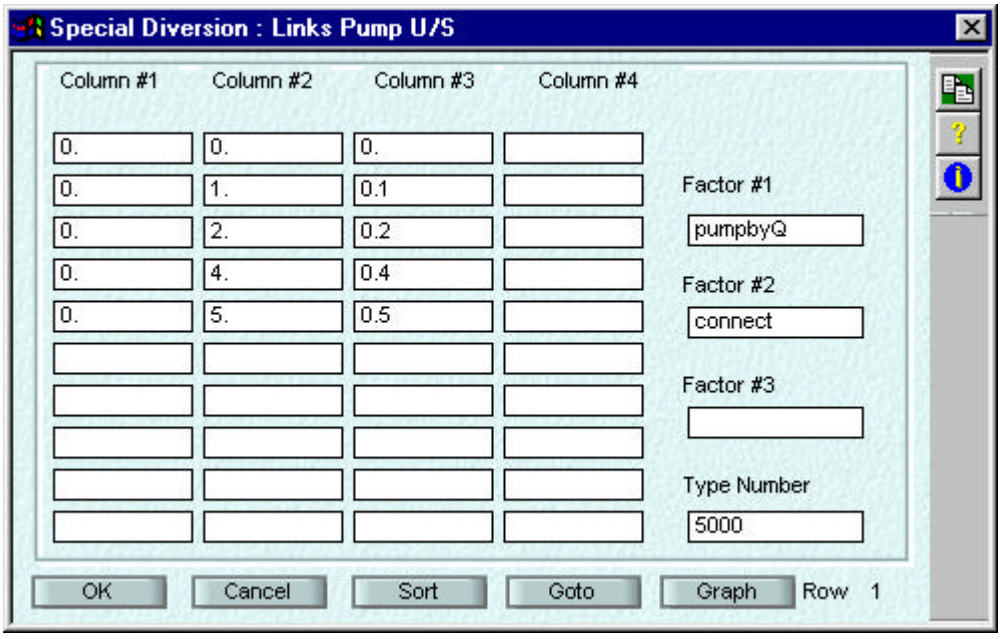




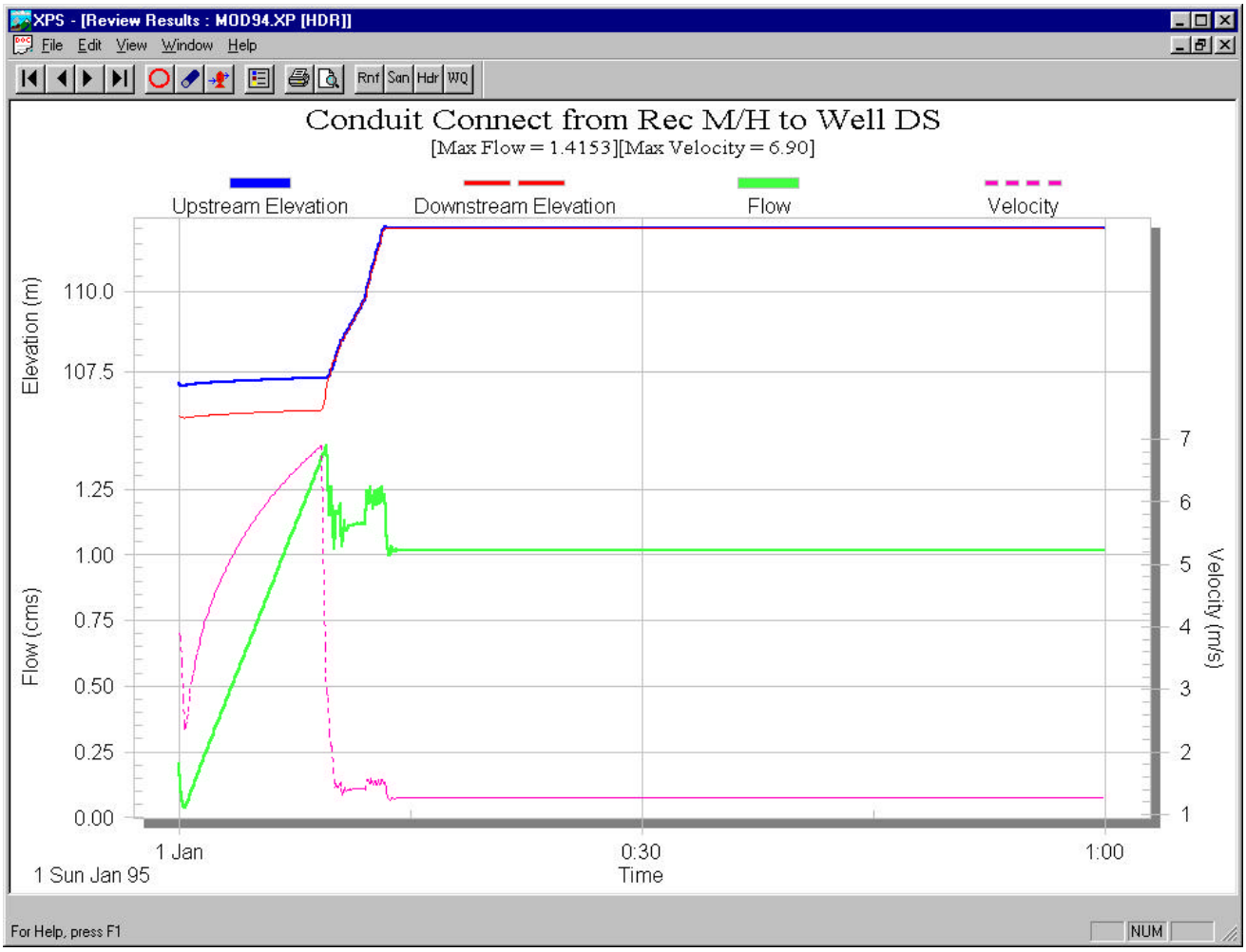
The normal flow in this pump is 0.40 cms as shown to the right.

The "rule curve" for the pump rated by non-adjacent flow is shown on the next page and is entered in the Other table in the special conduit dialog. The "rule curve" is entered in column 2 and column 3 of the dialog. Factor #1 is always the name pumpbyQ; factor #2 is the name of the non-adjacent conduit; column #2 is the flow in the non-adjacent conduit; column #3 is the flow for the pump based on the flow in column #2. Please note that the program interpolates intermediate values.





Solve the model and review the results of the flows in conduit connect.



Review the flows in the pump. These flows are 10 percent of the flows in conduit connect.