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FLOW PATH ANALYSIS AS AN ADDITIONAL CALIBRATION TARGET TO CALIBRATE A GROUNDWATER FLOW MODEL

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ABSTRACT

A groundwater flow model using the finite element numerical code (FEFLOW) was developed for a coastal wetlands system (Lake Warden Wetlands system) to assess the interaction between the groundwater and surface water. The system to be modeled is complex. As a first step the flow model was calibrated to observed groundwater levels measured since 2001 for both steady state and 19 transient stresses. Particle tracking analysis was conducted using the calibrated steady state model to test the source areas of water discharging to the lakes within the wetlands system. The analysis was able to delineate the connectivity between the lakes in the wetland and the flow path analysis provides an additional means to verify the flow model.