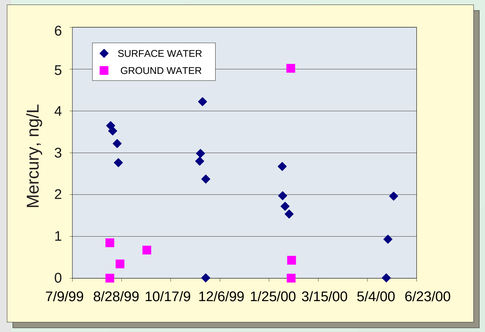
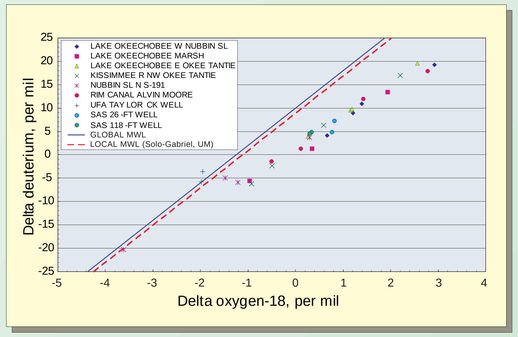
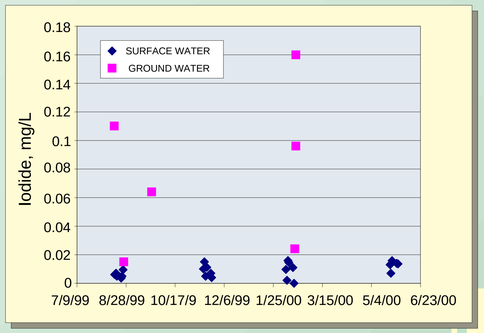
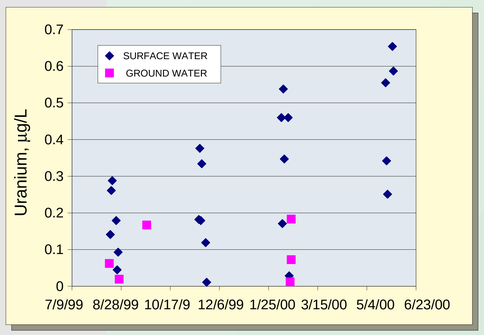
WATER-QUALITY CHARACTERIZATION OF SURFACE AND GROUND WATERS FOR GEOCHEMICAL MODELING OF AQUIFER STORAGE AND RECOVERY, SOUTH FLORIDA, 1999-2000

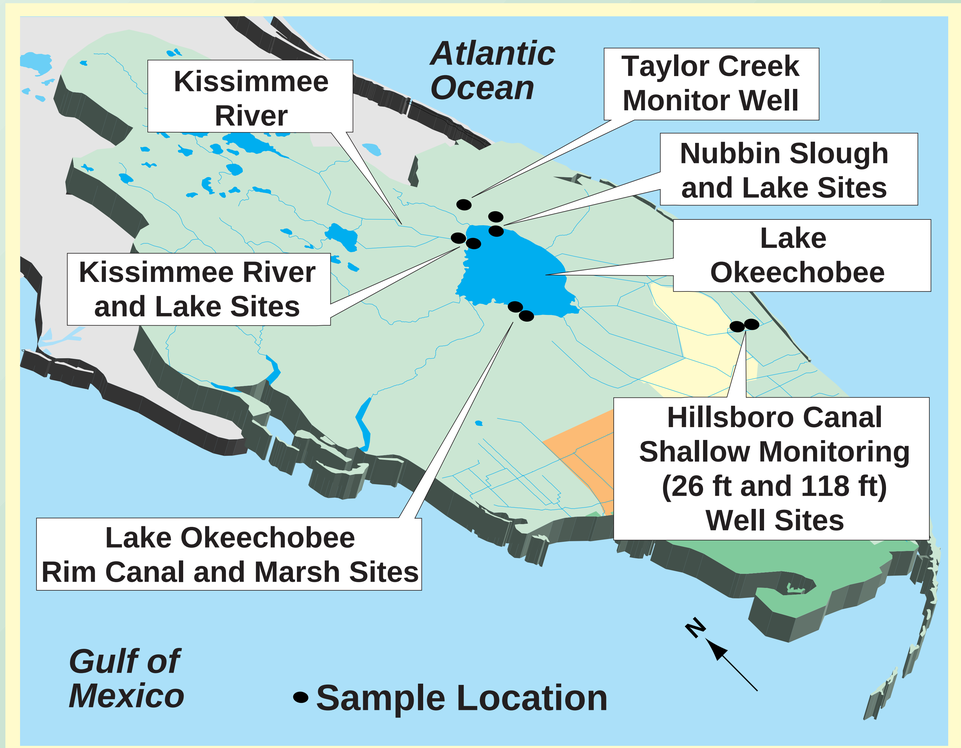
USGS science for a changing world











OBJECTIVE OF 1999-2000 WATER-QUALITY SAMPLING STUDY

Characterize the quality of surface and ground water in areas anticipated for ASR

Collect some of the information and data needed for geochemical modeling

PROPOSED MODELING PROJECT

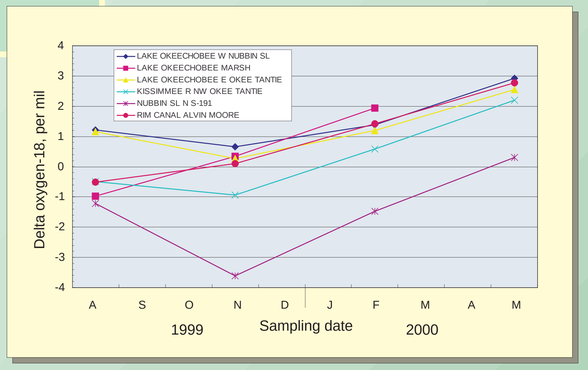
Geochemical Modeling of Water-Rock Interactions Resulting from Aquifer Storage and Recovery near Lake Okeechobee

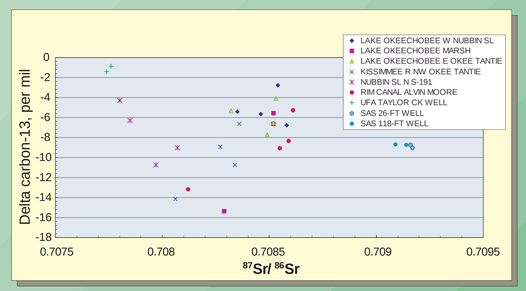
OBJECTIVES:

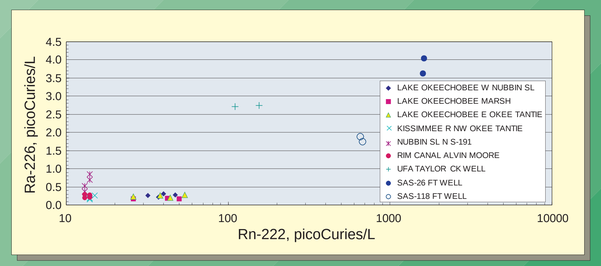
- Identify dominant geochemical reactions that will result from interactions of injected water, aquifer material, and native water in targeted injection zones
- Determine which naturally occuring environmental tracers and isotopes are most effective in quantifying mixing reactions, water-rock dissolution/ precipitation reactions, and recovery efficiency of injected water that is stored in the Upper Floridan aquifer

PARAMETER MEASURES

- DO, Temperature, pH, alkalinity
- Major ions
- Nutrients, DOC
- Chlorophyll
- Trace elements
- Isotopes of O, H, C, N, Sr
- Radionuclides







MODELS OF MIXING AND GEOCHEMICAL REACTIONS WILL REQUIRE INFORMATION ON:

- Chemical composition of source water
- Chemical composition of native ground water
- Chemical composition of aquifer materials

Examples of data that may be useful for geochemical modeling