

Prepared in cooperation with the Sweetwater Authority, Otay Water District, and City of San Diego

Installation of multiple-depth monitoring wells in Otay River Valley

Hydrogeologic investigations of the San Diego area, California

Summary

Multiple-depth monitoring wells provide critically important data to aid in understanding complex hydrogeology, such as that found in the coastal San Diego area. Because no comprehensive study of ground-water resources has been done for the San Diego area, a major element of the present USGS study is to install multiple-depth wells in selected areas of four coastal river basins.

During 2008, two wells will be installed in the Otay River Valley. Each well will be about 1,500 feet deep, and will have five separate two-inch PVC piezometers, installed to selected depths. These piezometers will be monitored for ground-water levels and sampled for ground-water quality. The well sites will be permanent installations and will provide data for decades.

Otay Well Sites

The United States Geological Survey (USGS), in cooperation with the Otay Water District and the Sweetwater Authority, will be installing two 1,500-foot-deep monitoring wells along the Otay River (fig. 1). These sites were chosen to optimally identify geologic units, integrate with data from other wells, and ensure long-term data collection.

Results from the drilling will help define the quantity and quality of ground water in the coastal San Diego area. The east well site will identify the source and quantity of recharge to the Otay area; the west well site will monitor any seawater intrusion. If sufficient ground water is identified, it may provide an additional local resource, possibly via desalination.

Well Drilling and Construction

Drilling for each well will take about four weeks. The hours of operation each day, including weekends, are 7 am to 7 pm. During the first three weeks, noise

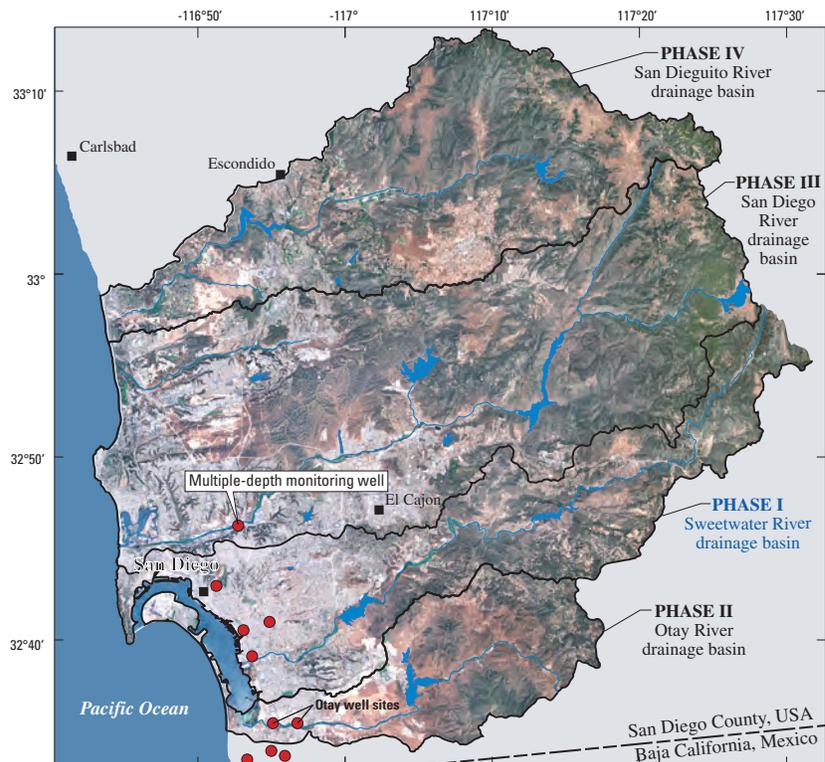


Figure 1. Location of multiple-depth monitoring wells, San Diego area, California.

levels will be typical of those associated with heavy equipment (fig. 2). During the final week, noise will be reduced as the well is constructed and the site is restored to its original condition. Subsequent well development and water-quality sampling will be relatively unobtrusive. All data will be available on the project website.

Contacts

For all questions concerning the well site or drilling, please contact:

Sweetwater Authority, Jack Adam, 619-420-1413, jadam@sweetwater.org or

USGS site supervisor Rhett Everett, Hydrologist, 619-225-6174, everett@usgs.gov.

For questions concerning the USGS hydrogeologic study of the San Diego area, please contact:

USGS Project Chief, Wes Danskin, Research Hydrologist, 619-225-6132, wdanskin@usgs.gov, or

refer to the project website,

<http://ca.water.usgs.gov/sandiego>



Figure 2. Typical drill rig used to construct a multiple-depth monitoring well.



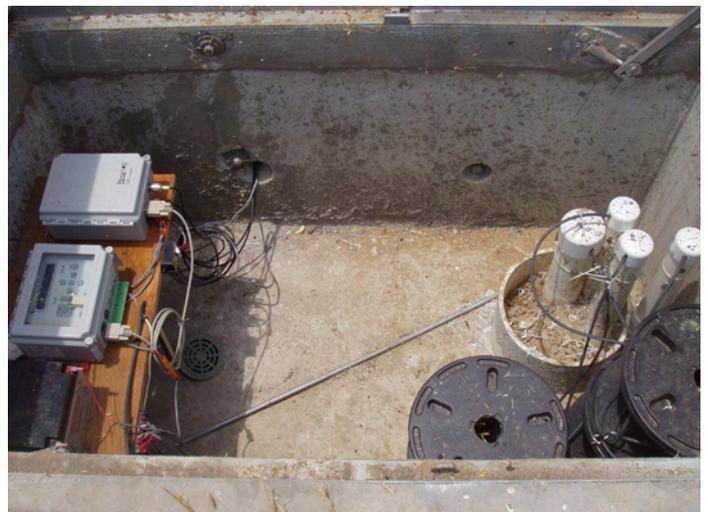
Educational outreach area with samples, storyboard, and shade structure. Drill rig is in background.



Core samples are taken from selected depths using a wire-line device. Cores help correlate geologic layers.



Installation of 2-inch PVC pipe which will allow access to specific depths to measure water levels and sample water quality. Note cluster has 3 other wells.



Inside of vault showing piezometers, transducer wires, data logger, and satellite link. Real-time data is provided via the internet.



Final installation of 3 by 5 foot, traffic-rated vault. USGS and well ID are welded on top.



Final installation of vault, solar panel, and satellite antenna at El Toyon Park, National City, CA.