

**INTRODUCTION**

Maps of the potentiometric surface of the Floridan aquifer in west-central Florida are prepared semiannually by the U.S. Geological Survey in cooperation with the Southwest Florida Water Management District. Maps for May and September show the potentiometric surface that is close to the annual low or high water-level condition that usually occurs in May or September, respectively. Potentiometric surface maps have been prepared for January 1964, May 1969, May 1971 to 1974, and for May and September since 1975.

The potentiometric surface is the level to which water will rise in tightly cased wells that tap the Floridan aquifer. The surface is mapped by determining the altitude of water levels in a network of wells and is represented on maps by contours that connect points of equal altitude.

This report shows the potentiometric surface of the Floridan aquifer for September 1983. Data for the map were collected during September 12-23. The map represents water-level conditions near the end of the summer rainy season when ground-water withdrawals for agricultural use are low. Hence, the potentiometric surface is near its highest level for the year.

**SUMMARY OF CONDITIONS**

Annual and seasonal fluctuations of the potentiometric surface are shown by hydrographs in figure 1. The hydrographs generally indicate that water levels in northern areas remain fairly uniform from year-to-year and seasonally, whereas water levels in southern areas show large year-to-year and seasonal fluctuations. Water levels in most wells measured in September 1983 were higher than those measured in May 1983. September water levels averaged about 0.6 foot higher than May levels in areas north of Hillsborough County and about 7 feet higher in southern areas. Water-level increases in the north ranged from zero to about 2 feet and in the south from zero to about 5 feet in inland areas. Water-level declines in the north ranged from zero to about 7 feet and occurred in scattered parts of all northern counties. In the south, water-level increases ranged from zero to about 3 feet along coastal and extreme southern regions and from about 5 to 34 feet in other southern areas. The greatest water-level increases occurred in southern Hillsborough County where irrigation pumpage contributes to large seasonal fluctuations. There were a few areas in Hillsborough and Pinellas Counties where September water levels showed declines ranging from about 1 to 3 feet when compared with May levels.

Generally, water-level changes were small in individual wells in September 1983 when compared to September 1982. Water levels in all wells measured in September 1983 averaged about 0.1 foot lower than September 1982 levels in the north and about 0.1 foot higher in the south. Water-level changes in most wells in the north ranged from zero to a decline of about 3 feet, whereas other wells had an increase ranging from zero to about 7 feet. Water-level changes in the south ranged from 7 feet higher to 8 feet lower although most 1983 water levels were within 1 foot of those in 1982.

**SELECTED REFERENCES**

Barr, G. L., and Schiner, G. R., 1982, Potentiometric surface of the Floridan aquifer, Southwest Florida Water Management District, September 1982: U.S. Geological Survey Open-File Report 82-1011, 1 sheet.

1983, Potentiometric surface of the Floridan aquifer, Southwest Florida Water Management District, May 1983: U.S. Geological Survey Open-File Report 83-547, 1 sheet.

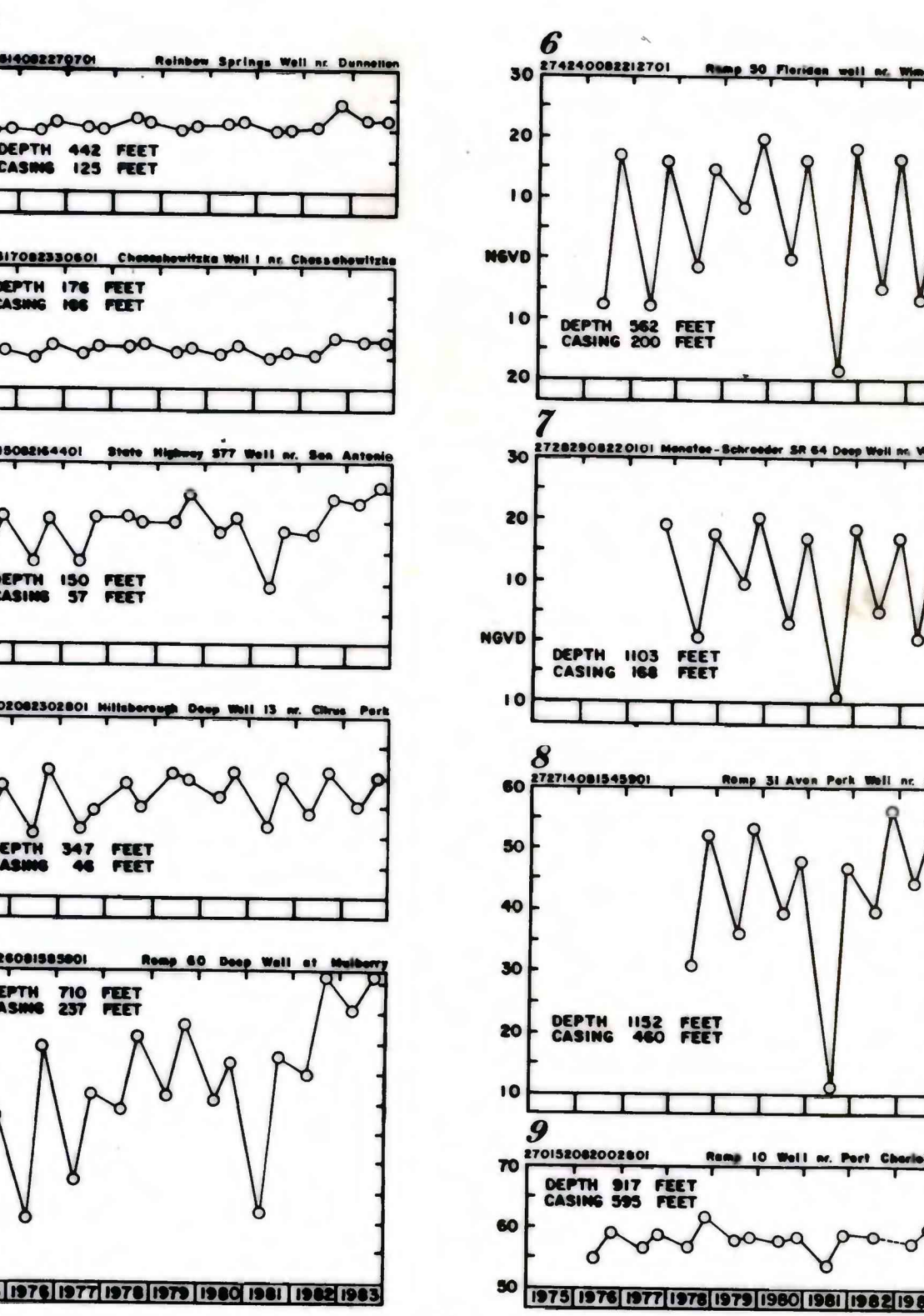


Figure 1.-- Hydrographs showing May and September water levels in selected wells

**EXPLANATION**

20--POTENTIOMETRIC CONTOUR-- Shows altitude at which water level would have stood in tightly cased wells. Contour interval 5 and 10 feet. National Geodetic Vertical Datum of 1929 (NGVD). Machures indicate depressions

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BOUNDARY OF SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

BOUNDARY OF WATER MANAGEMENT BASIN

NOTE: Potentiometric contours are generalized to show the water level of a point in time in a changing hydrologic system taking into account variations in hydrogeologic conditions. These include different depths of wells, nonsimultaneous measurements of water levels, variable effects of pumping, and changing climate. Potentiometric contours thus may not conform exactly with individual measurements of water levels.

SCALE 1:500 000  
0 10 20 30 MILES  
0 10 20 30 40 KILOMETERS

# POTENTIOMETRIC SURFACE OF THE FLORIDAN AQUIFER, SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, SEPTEMBER 1983

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