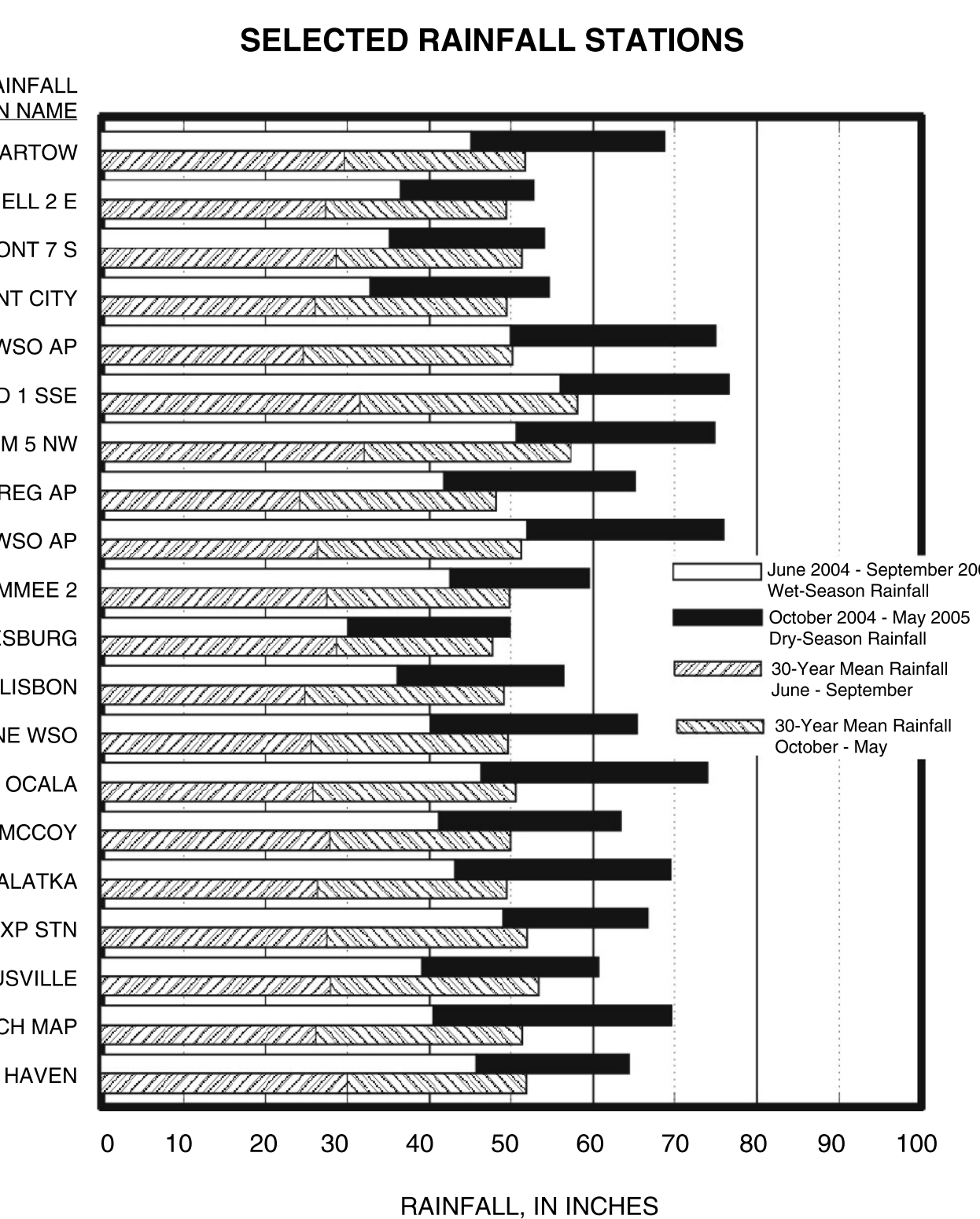


- EXPLANATION**
- 50 — POTENTIOMETRIC CONTOUR -- Shows altitude at which water level would have stood in tightly cased wells. Hatchures indicate depressions. Contour intervals 10 feet. Vertical datum is NGVD29. Dashed where inferred.
 - STATE WATER MANAGEMENT DISTRICT BOUNDARY
 - SRWMD -- St. Johns River Water Management District
 - SRWMD -- Suwannee River Water Management District
 - SFWMD -- South Florida Water Management District
 - SWFWMD -- Southwest Florida Water Management District
 - 37 SURVEYED WELL WITH KNOWN OPEN-HOLE INTERVAL -- Measuring-point datum is referenced to benchmark datum. Number is altitude of water level in feet above or below NGVD29
 - 31 SURVEYED WELL WITH UNKNOWN OPEN-HOLE INTERVAL -- Measuring-point datum is referenced to benchmark datum. Number is altitude of water level in feet above or below NGVD29
 - 42 UNSURVEYED WELL WITH KNOWN OPEN-HOLE INTERVAL -- Measuring-point datum is estimated from topographic map. Number is altitude of water level in feet above or below NGVD29
 - 36 UNSURVEYED WELL WITH UNKNOWN OPEN-HOLE INTERVAL -- Measuring-point datum is estimated from topographic map. Number is altitude of water level in feet above or below NGVD29
 - SPRING -- Line indicates direction of spring outflow
 - FLOWING BOREHOLE
 - SINKHOLE -- Surface collapse feature exposing the Upper Floridan aquifer. Where measured, number is altitude of water level in feet above NGVD29
 - RAINFALL STATION -- Letter is index to bar graph.

NOTE: The potentiometric contours are generalized on a regional scale to portray water levels in a dynamic hydrologic system taking due account of the variations in hydrogeologic conditions such as well-depth differences, non-simultaneous measurements of water levels, variable effects of pumping, and changing climatic influence. The potentiometric contours, thus, may not conform exactly with individual measurements of water level.



FIRST-MAGNITUDE SPRINGS

First-magnitude spring name	Spring-pool altitude, in feet above NGVD of 1929	Discharge, in cubic feet per second	Period-of-record mean-daily discharge, in cubic feet per second
Silver Springs	42	742 ^a	775
Rainbow Springs	31	638 ^a	698
Blue Springs (Volusia County)	1	157 ^a	156
Silver Glen Springs	3	108 ^a	108
Alexander Springs	11	122 ^b	106

These altitudes do not necessarily reflect the potentiometric surface at the spring pool.
^a Mean-daily discharge for May 2005.
^b Instantaneous discharge measured on May 9-25, 2005.

INTRODUCTION

This map depicts the potentiometric surface of the Upper Floridan aquifer in the St. Johns River Water Management District and vicinity for May 2005. Potentiometric contours are based on water-level measurements collected at 598 wells during the period May 5-31, near the end of the dry season. Some contours are inferred from previous potentiometric-surface maps with larger well networks. The potentiometric surface of the carbonate Upper Floridan aquifer responds mainly to rainfall, and more locally, to ground-water withdrawals. Potentiometric-surface highs generally correspond to topographic highs where the aquifer is recharged. Springs and areas of diffuse upward leakage naturally discharge water from the aquifer and are most prevalent along the St. Johns River. Areas of discharge are reflected by depressions in the potentiometric surface. Ground-water withdrawals locally have lowered the potentiometric surface. Ground water in the Upper Floridan aquifer generally flows from potentiometric highs to potentiometric lows in a direction perpendicular to the contours.

SUMMARY OF HYDROLOGIC CONDITIONS

Measured values of the potentiometric surface ranged from 5 feet below NGVD29 near Fernandina Beach, Florida, to 129 feet above NGVD29 in Polk County, Florida. The average water level of the network in May 2005 was about 2 feet lower than the average in September 2004 following average to below-average rainfall during the intervening dry season. Seasonal differences in water levels generally range from 4 to 6 feet. For 568 wells with previous measurements, May 2005 levels ranged from about 14 feet below to about 11 feet above September 2004 water levels.

Above-average rainfall during the preceding 12 months contributed to the average water level of the network in May 2005 being about 3 feet higher than the average water level in May 2004. For 581 wells with previous measurements, May 2005 water levels ranged from about 4 feet below to about 13 feet above May 2004 water levels.

ADDITIONAL REFERENCE

Long-term hydrographs of ground-water levels for continuous and periodic wells are available at internet site: <http://waterdata.usgs.gov/fl/nwis/gw>

Base from U.S. Geological Survey digital data, 1:100,000, 1983 Universal Transverse Mercator projection, Zone 17

POTENTIOMETRIC SURFACE OF THE UPPER FLORIDAN AQUIFER IN THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT AND VICINITY, FLORIDA, MAY 2005

By
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2005

Copies of this map can be purchased from:
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