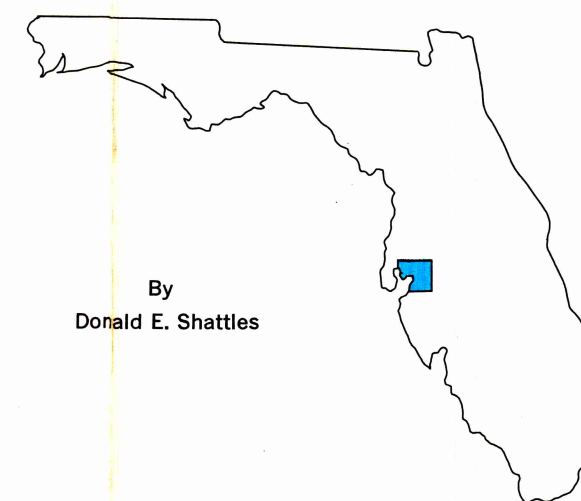


QUALITY OF WATER FROM THE FLORIDAN AQUIFER IN HILLSBOROUGH COUNTY FLORIDA 1963



By
Donald E. Shattles

The quality of water determines its suitability for specific uses because every use of water has several water quality requirements that must be satisfied. The tolerable limits depend on the constituent and the use. For example, water for high pressure boilers should contain very little dissolved matter. However, cooling water may, under some conditions, be saline but should have a low temperature.

The water quality information given in this report is sufficient to determine whether or not the water is suitable for many uses. Additional information may be required to determine its suitability for a few uses that have unusual requirements.

Hardness and the concentration of dissolved solids, sulfate, chloride and magnesium generally increase toward Hillsborough and Tampa Bays, which is in the direction of water movement. Generally, the water in the shallow depths of the Floridan aquifer is less mineralized than water at greater depths. Leakage from wells tapping highly mineralized water at greater depths and heavy pumping may degrade the quality of water in the Floridan aquifer. The resulting mixture is of poorer quality than that of water from the upper part of the aquifer.

The concentration of iron is low in comparison with other dissolved minerals. Of the 37 samples analyzed for iron, 30 contained less than 0.3 parts per million, which is the maximum recommended for domestic use. The fluoride concentration is also low. Of the 28 wells sampled for fluoride analysis, 25 had fluoride concentrations less than 0.8 ppm, which is the upper limit recommended for drinking water in areas having an average maximum daily temperature of 79.5°F to 90.5°F.

The pH of all water samples analyzed was greater than 7.0. Water having a pH of more than 7.0 is alkaline and generally not corrosive. Temperature of water from the principal artesian aquifer ranged from 75°F to 85°F.

Multiple samples taken from well 805-288-01 between depths of 600 and 1,100 feet and from well 801-312-15 between 100 and 417 feet show that mineralization of the water is low above about 850 feet, but increases rapidly below 850 feet.

Summary of chemical analysis in parts per million

Constituent	Number of Wells	Maximum	Minimum	Median	Maximum, normally acceptable limit
Alumina	25	40	5.0	18	—
Iron	37	1.4	0	.01	0.3
Calcium	40	456	7.2	58	—
Magnesium	40	85	.4	11	—
Sulfate	22	96	2.1	6.2	—
Phosphate	32	32	0	.4	—
Bicarbonate	34	285	11	194	—
Silicate	39	912	0	23	250
Chloride	40	305	4.5	10	350
Fluoride	28	1.3	0	.5	—
Nitrate	24	20	0	.1	—
Phosphate	17	5.4	0	.6	—
Dissolved Solids	37	1,800	51	257	500
Calcium Magnesium	33	1,280	20	180	—
Noncarbonate	33	1,120	0	91	—
Noncarbonate	33	2,850	79	398	—
pH	40	8.1	7.2	—	—
Temperature	40	85°	75°	77°	—

J. Drinking Water Standards (U.S. Public Health Service, 1959)

