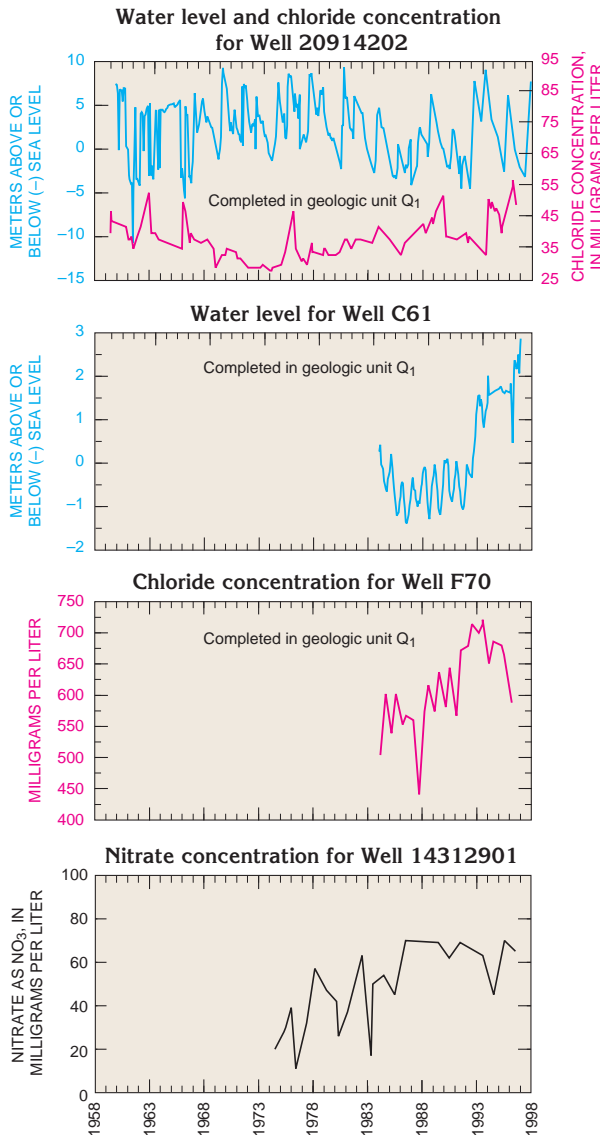


Coastal Basin

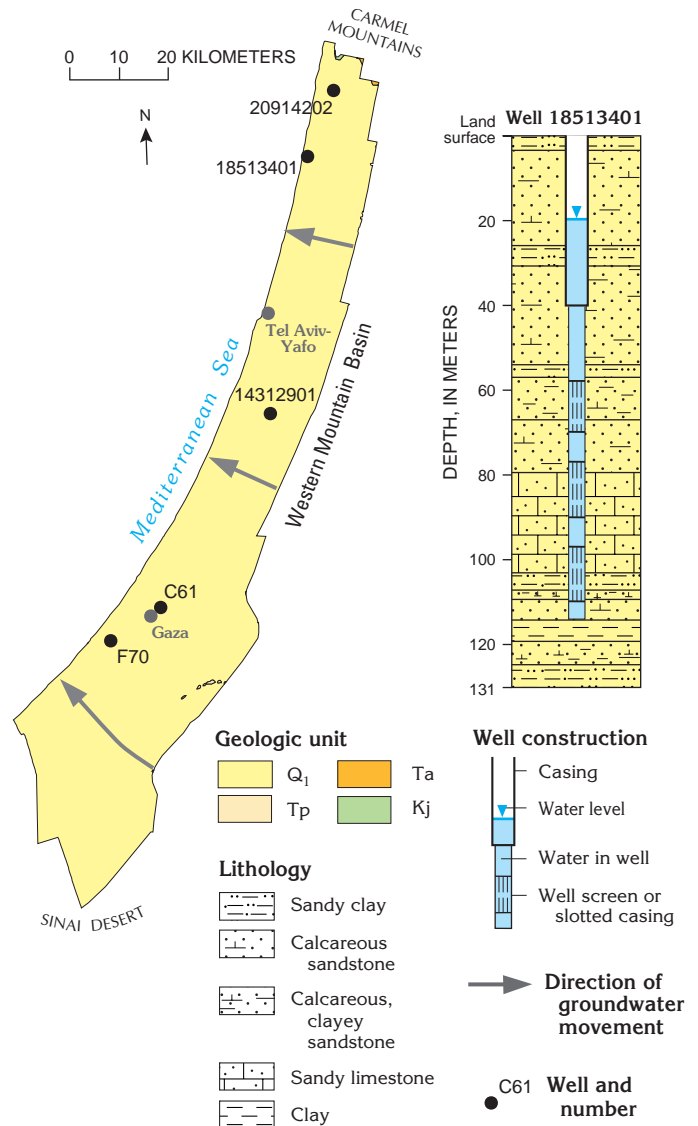


The Coastal Basin covers an area of about 2,000 km² and is located in the Coastal Plain, along the eastern shore of the Mediterranean Sea. The area is underlain by water-bearing sand, sandstone, gravel, and conglomerate of geologic unit Q₁ that overlie relatively impervious clay, marl, limestone, and chalk of geologic unit Tp. The basin is characterized by flat relief, and is bounded to the east by the foothills of the Mountain Belt, to the north by the Carmel Mountains, to the west by the Mediterranean Sea, and to the south by the Sinai Desert.



Water-level fluctuations on the hydrographs for wells 20914202 and C61 reflect changes in pumpage and precipitation. During the last 3 decades, water level in wells declined in response to pumpage; however, during 1992 there was a sharp rise in water level that corresponded to a period of heavy rainfall.

Concentrations of chloride and nitrate generally have increased, possibly because of changes in pumpage, agricultural practices, waste disposal, or other human activities.



Typical well construction in the Coastal Basin is illustrated for well 18513401 along the coastline north of Tel Aviv-Yafo. The 114-m deep well withdraws water from several water-bearing intervals in geologic unit Q₁, has a water level of about 20 m below land surface, and yields about 50 L/s.

Groundwater is recharged by precipitation at an average volume of 372 MCM/yr and generally flows westward toward the Mediterranean Sea. Groundwater is the principal source of freshwater in the basin, withdrawn primarily from sand, gravel, and sandstone of geologic unit Q₁. Groundwater levels are influenced by precipitation and pumpage and generally fluctuate about 1–2 meters per year (m/yr). Larger fluctuations may occur in the vicinity of pumping wells.

Groundwater in the Coastal Basin is generally of good quality for most uses, with chloride concentrations between 50 and 250 mg/L, and nitrate concentrations between 10 and 70 mg/L. Chloride concentrations of as high as 6,000 mg/L occur in local areas along the coast.