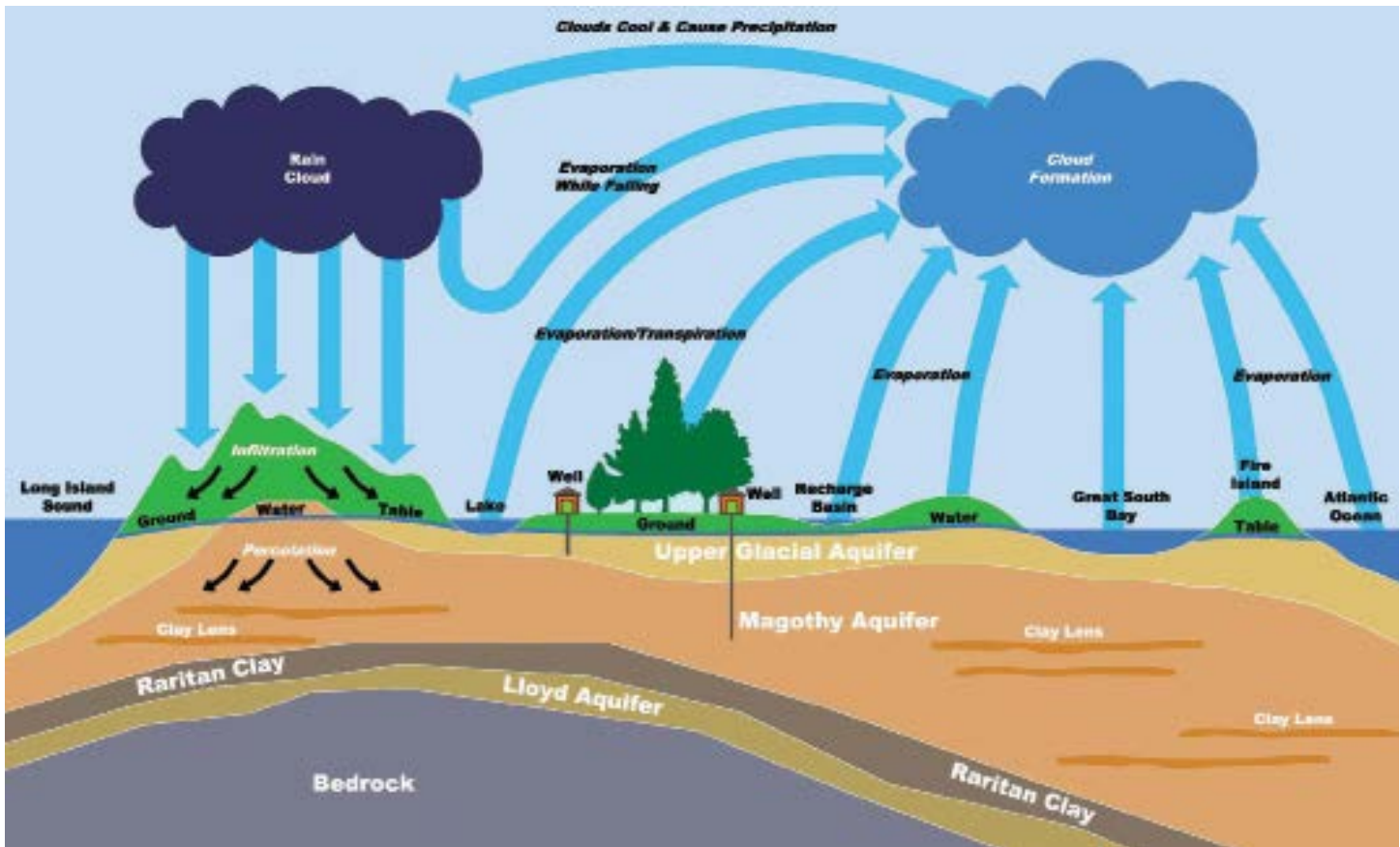


# THE WATER CYCLE ON LONG ISLAND



In general, the sources of drinking water (both tap water and bottled water) can include rivers, lakes, streams, ponds, reservoirs, springs, and aquifers. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activities. Contaminants that may be present in source water include: microbial contaminants, inorganic contaminants, pesticides and herbicides, organic chemical contaminants, and radioactive contaminants.

All of the water we supply to you comes from beneath the ground and is referred to as groundwater. The water is stored beneath the ground in a sandy, geological formation known as the aquifer system. Water in the aquifer system originates as precipitation (such as rain and snow), which slowly percolates down through the soil and into the aquifers.

The total depth of the Long Island aquifer system is shallowest on the north shore (approximately 600 feet) and deepest along the south shore (approximately 2,000 feet).

There are four primary formations which are layered, and make up the Long Island Aquifer System. From the shallowest to the deepest, these formations are:

**Upper Glacial Aquifer** — contains the newest water to the groundwater system. The Water Authority has 282 wells drawing from this portion of the aquifer. Virtually all private wells draw from the Glacial Aquifer.

**Magothy Aquifer** — is the largest of the three formations and holds the most water, much of which is hundreds of years old. There are 352 SCWA wells drawing from this portion of the aquifer.

**Raritan Clay** — is a clay layer that separates the Magothy and Lloyd Aquifers. Some portions of the Raritan contain permeable, sandy formations that hold enough water to pump from. The SCWA has 3 wells in the Raritan.

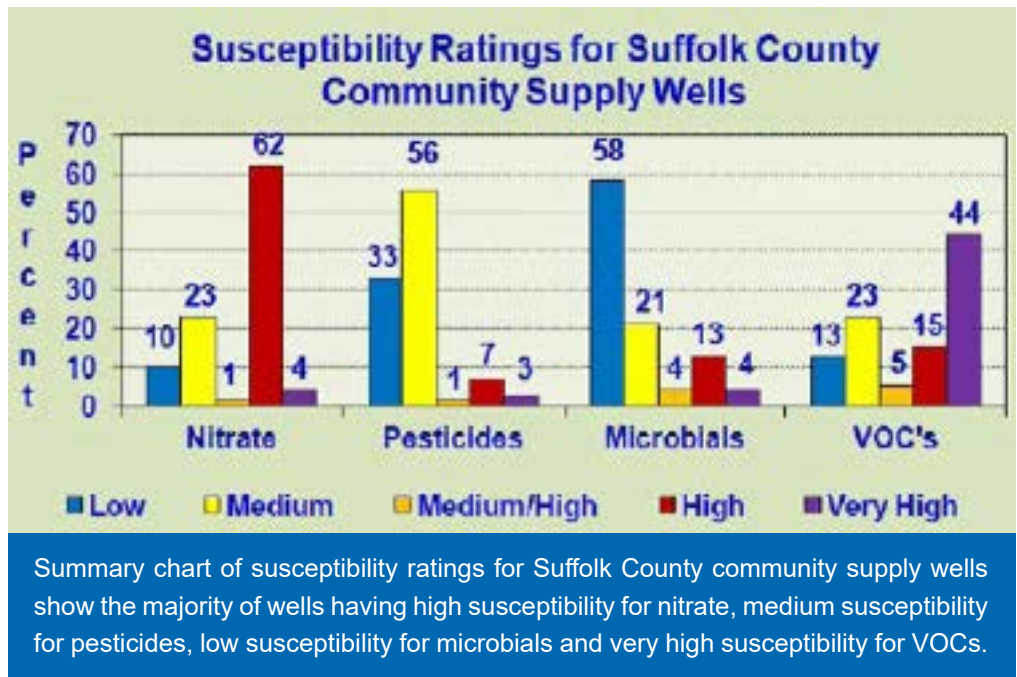
**Lloyd Aquifer** — is a largely-untapped layer which contains the oldest water, some of which has been held in the Aquifer System for more than 5,000 years. The SCWA has 3 Lloyd wells.

# SOURCE WATER ASSESSMENT SUMMARY REPORT

The federal Safe Drinking Water Act (SDWA) amendments of 1996 created a Source Water Assessment Program (SWAP) to evaluate existing and potential threats to the quality of public drinking water supplies throughout the U.S. To carry out this program in New York, the Bureau of Water Supply Protection of the New York State Department of Health (NYSDOH) developed the New York State SWAP plan, with input from a variety of interested parties. Source water assessments were performed for all public water supplies in Nassau and Suffolk

Counties, in accordance with the final New York State SWAP plan prepared by the NYSDOH and approved by the U.S. Environmental Protection Agency (EPA) in November 1999. The chart above and summary below apply to **all** Suffolk County community supply wells.

It is important to remember that the source water assessments only indicate the **potential** for contamination of a supply well, based upon the likelihood of the presence of contaminants above ground in the source water recharge area and upon the **possibility** that any contaminants present can migrate down through the aquifer to the depth at which water enters the well screen. In most cases, the susceptibility, or potential, for contamination **has not** resulted in actual source water contamination. If contamination of a well source is identified, the Suffolk County Water Authority can either provide treatment or withdraw the well from service, so that all applicable drinking water standards are met.



## Nitrate

Almost 70 percent of Suffolk County community supply wells were rated as high, or very high, for susceptibility to nitrate, with the lower population density accounting for reduced contaminant prevalence ratings in the central and eastern parts of the county.

## Pesticides

The susceptibility of approximately 10 percent of community supply wells were rated medium-high, high, or very high for pesticides, largely where significant tracts of agricultural land exist in eastern Suffolk County.

## Microbials

Almost 60 percent of community supply wells in Suffolk County have a low susceptibility to contamination by microbials. Over 20 percent of the community supply wells were rated medium-high, high, or very high for microbials. This is a result of the presence of microbial sources in unsewered areas and the relatively short travel times from the water table to shallow well screens, particularly in the central and eastern parts of the county.

## Volatile Organic Chemicals (VOCs)

Almost 65 percent of the community supply wells in Suffolk County have susceptibility ratings of medium high, high or very high for VOCs, while over 35 percent of the wells are rated medium or low. If you would like detailed information regarding the source water assessment results for the source water that is supplied to your distribution area, please contact our laboratory at (631) 218-1129.