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# *PORT WASHINGTON WATER DISTRICT*

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## **WATER QUALITY REGULATIONS AND STANDARDS - WHAT THEY ARE AND HOW THEY ARE ESTABLISHED**

Long Island gets its drinking water from a system of aquifers – huge underground layers of sand and gravel that contain trillions of gallons of fresh water. It is interesting to note that Long Island is one of the few areas in the region that obtains its sole source of water from aquifers - most areas utilize open surface reservoirs.

Long Island's underground aquifers, constantly replenished by precipitation, have unique benefits as well as potential problems that must always be taken into consideration. Because rainwater seeps through hundreds of feet of soil and closely packed natural particles before reaching the aquifers, it gets thoroughly filtered. This natural process cleanses the water of most impurities.

However, with close to 3 million residents living and conducting business and industrial activities above the water supply, there is always the possibility that a contaminant of one sort or another may seep through the ground and reach the aquifers. To help guard against groundwater contamination, both the federal government and New York State have enacted strict groundwater protection regulations, including chemical and hazardous materials storage guidelines, zoning laws that prohibit a variety of industries from locating within the "deep recharge" areas that feed the aquifers, and tough sewage treatment requirements. In fact, due to these tough environmental laws, the relatively small amount of contamination that has appeared on Long Island today is mostly traceable to contamination from industrial discharges, fertilizers and pesticides used over three decades ago.

### **Water Quality and Testing Regulations**

Over the past decade, federal and New York State environmental agencies, as well as New York State and Nassau County health departments, have greatly strengthened drinking water regulations. Today, the Port Washington Water District is required, as are all public water suppliers on Long Island, to test all its supply wells up to four times per year for 144 parameters, including volatile organic chemicals, inorganics, pesticides and herbicides (water quality prior to treatment). The tests are conducted by an independent, state certified laboratory with results sent directly to the Nassau County Health Department, which also conducts regular spot checks on its own. Results of these tests are published each year in an annual drinking water quality report, which is available from all public water suppliers.

Generally a public water distribution system (the water that is delivered to residences and businesses, after treatment) is also aggressively monitored on a routine basis, as required by law. A minimum of two times per year, lab samples for 57 volatile organics and 35 inorganic and physical constituents are drawn from multiple locations in the distribution system for analysis. Additionally, sampling is done for lead, copper and physical and corrosivity characteristics. A summary of the results of these tests is what is published in a water purveyors annual drinking water quality report.

Lab samples are obtained once each week at multiple locations in the distribution system and analyzed for bacteria and chlorine residual. Many water suppliers also monitor pH and chlorine levels on a 24-hour a day basis with automated equipment at all supply well locations. Daily manual checks of pH and chlorine levels are also taken as a crosscheck to verify the automated reading levels.

## **Testing Standards**

The maximum levels of substances allowed in the water delivered to residents and businesses in the Port Washington Water District's service area are established by the federal government and New York State. In fact, New York State regulations exceed federal regulations and are considered equal to the toughest water standards found anywhere in the country.

In New York State, the permissible level of volatile organics (carbon-based constituents) is 5 parts per billion. To put this in perspective, 5 parts per billion is the equivalent of one second in 32 years! Our annual drinking water quality report summarizes testing for 57 volatile organics.

The permissible level for inorganic and physical constituents (non-carbon based) depends upon the constituent. Our annual drinking water quality report summarizes testing for thirty five (35) inorganic and physical parameters. For most of these parameters, maximum levels are set in parts per million. There are nine primary inorganics; cadmium, lead, mercury, selenium, arsenic, chromium, silver, beryllium and thallium for which permissible levels are set in parts per billion. For two inorganics; ammonia and foaming agents (also known as detergents), no maximum level has been established.

### **Are The Standards Stringent Enough?**

Standards are set based on two primary factors: the maximum level of any constituent determined to be safe for humans and the analytic limit that can be detected reliably by current technology. "Safe" levels are established by the United States Environmental Protection Agency (EPA) based on a rigorous protocol of tests. The levels established, called MCL's (maximum contaminant level), are enforceable standards based on current testing technology.

Should acceptable levels be set even more stringent than current standards? The exhaustive testing protocols used by the United States EPA result in standards that represent those levels at which a contaminant presents an infinitesimal risk to humans. For sure, driving a car presents a far greater risk to an individual's health and safety than a contaminant in the water supply at or below its established MCL. Does this mean there is absolutely no risk? No. For there to be absolutely no risk, acceptable contaminant levels would all have to be set at zero, and this is scientifically unfounded as well as technologically unenforceable. There will always be traces, no matter how minute, of inorganic and organic constituents in water - the world is not a "surgically sterile" environment. Additionally, the cost to develop testing technology that would be able to reliably test for zero levels would far outweigh the benefit of such technology.

What we do know is this - the water delivered to homes and businesses by Long Island public water supply systems meets or exceeds current federal, state and county standards.

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