UCMR3 Test Results For 2014 (continued)

WATER QUALITY BY DISTRIBUTION AREA

Naturally Occuring Compounds as well as Contaminants					Distribution Area 54				Distribution Area 57				Distribution Area EFWD				Distribution Area RSWD			
Detected Compound	Likely Source	MCL	MCLG	Unit of Measure	Range of Readings Low Value	High Value	Avg. Value	No. of Tests	Range of Readings Low Value	High Value	Avg. Value	No. of Tests	Range of Readings Low Value	High Value	Avg. Value	No. of Tests	Range of Readings Low Value	High Value	Avg. Value	No. of Tests
Inorganics																				
Chromium, total	Natural deposits	100	100	ug/L	ND	0.57	0.22	4	0.43	0.43	0.43	1	ND	0.32	ND	18	ND	0.61	0.35	2
Cobalt-59	Naturally occurring	n/a	n/a	ug/L	ND	ND	ND	4	ND	ND	ND	1	ND	5.1	1.1	18	ND	ND	ND	2
Strontium-88	Naturally occurring	n/a	n/a	mg/L	0.001	0.002	0.001	4	0.049	0.049	0.049	1	0.002	0.044	0.017	18	0.028	0.033	0.030	2
Vanadium	Naturally occurring	n/a	n/a	ug/L	ND	1.0	0.4	4	ND	ND	ND	1	ND	0.3	ND	18	0.7	1.0	0.8	2
Synthetic Organic Compounds including Pesticides, Herbicides, Pharmaceuticals and Personal Care Products																				
PFBS	Used on products for stain/water resistance	50	n/a	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	9	NA	NA	NA	0
PFHpA	Used on products for stain/water resistance	50	n/a	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	9	NA	NA	NA	0
PFHxS	Used on products for stain/water resistance	50	n/a	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	9	NA	NA	NA	0
PFOA	Fire fighting foam, cleaners, cosmetics, greases	50	n/a	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	9	NA	NA	NA	0
PFOS	Pesticide, alkaline cleaners, floor polish	50	n/a	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	9	NA	NA	NA	0
Volatile Organic Compounds																				
Carbon Tetrachloride	From industrial chemical factories	5	0	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	7	NA	NA	NA	0
Chlorodifluoromethane	Used as a refrigerant	5	n/a	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	0.87	0.16	7	NA	NA	NA	0
1,1-Dichloroethane	Degreaser, gasoline, manufacturing	5	n/a	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	0.11	ND	7	NA	NA	NA	0
1,2-Dichloroethane	From industrial chemical factories	5	n/a	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	7	NA	NA	NA	0
1,2-Dichloropropane	From industrial chemical factories	5	0	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	7	NA	NA	NA	0
Tetrachloroethene	Factories, dry cleaners, spills	5	0	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	7	NA	NA	NA	0
Trichloroethene	Metal degreasing sites, factories	5	0	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	7	NA	NA	NA	0
1,2,3-Trichloropropane	Degreasing agent, manufacturing	5	n/a	ug/L	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	7	NA	NA	NA	0

EDUCATIONAL INFORMATION

UNREGULATED CONTAMINANT MONITORING RULE CYCLE 2 (UCMR2)

The second cycle of the UCMR (UCMR2) published on January 4, 2007 included the chemicals used in explosives, flame retardants, insecticides, nitrosamines, herbicides and herbicide byproducts. As our Drinking Water Quality Reports for 2009, 2010, and 2011 indicated, we tested our wells as required and none of the chemicals from explosives or flame retardants and insecticides were detected. The SCWA continues to monitor for the herbicides and herbicide byproducts, and nitrosamines. The 2014 herbicide and herbicide byproducts test results for each distribution area are noted on pages 34 through 42.

2014 NITROSAMINE TEST RESULTS FOR DISTRIBUTION AREA 12*

Two wells, located in distribution area 12, have nitrosamines. Nitrosamines can be formed as a byproduct of the disinfection of drinking water or found as a contaminant in drinking water from manufacturing processes such as for rubber and latex products. Additionally, nitrosamines are found in tobacco smoke, cosmetics, and food products, such as cured meats and fish, beer, and smoked products, and they also form in the body from the nitrosation of dietary amines. EPA has classified several nitrosamines as probable human carcinogens, but has not set an MCL. The nitrosamines were measured at extremely low levels, in parts per trillion or ppt. A summary of the 2014 test results for distribution area 12 is shown in the chart below.

Detected Nitrosamine Compounds	Unit of Measure	Low Value	High Value	Avg. Value	No. of Tests
N-Nitrosomorpholine	ppt	ND	4.20	ND	20
N-Nitrosodiethylamine (NDEA)	ppt	ND	10.0	ND	20

** Please see map on pages 32 and 33 for the location of distribution area 12*

HEXAVALENT CHROMIUM MONITORING

Chromium is a naturally occurring metal found in rock, animals, plants, soils, and volcanic dust and gases. It occurs in two forms: trivalent chromium (Cr-3), an essential human dietary nutrient, and hexavalent chromium (Cr-6). Cr-6 is commonly found in groundwater. It is naturally occurring at low levels, and can also be found in drinking water as a contaminant from industrial processes. There is no specific Maximum Contaminant Level (MCL), which is the highest level allowed in drinking water, for Cr-6. Instead EPA has set an MCL for total chromium, which is the sum of all forms, of 100 ppb (parts per billion). The SCWA regularly tests for total chromium and has listed the results for each year in our Drinking Water Quality Reports. In 2014 the levels ranged from non-detect (no total chromium present) to 9.55 ppb, and the results for each distribution area can be found on pages 34 through 40. In 2014, the levels ranged from non-detect (no Cr-6 present) to 4.99 ppb. The results for each distribution area can be found on pages 34 through 42.

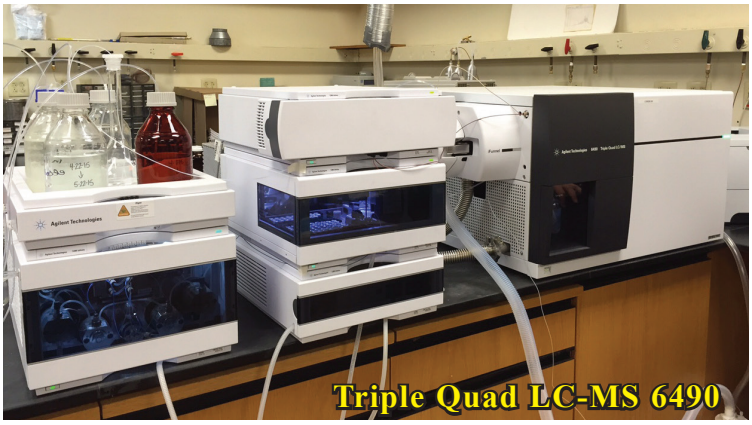
EDUCATIONAL INFORMATION

PHARMACEUTICALS AND PERSONAL CARE PRODUCTS (PPCPs) MONITORING

PPCPs are a diverse collection of thousands of chemical substances, including prescription and over-the counter therapeutic drugs, veterinary drugs, fragrances, cosmetics, lotions such as sunscreen and insect repellants, diagnostic agents and vitamins. PPCPs from bodily excretion, bathing, and disposal of unwanted medications to septic systems, sewers or trash have the potential to enter our drinking water. Information on how to properly dispose of unwanted pharmaceuticals can be found at *www.epa.gov/ppcp*.

The detection and quantification of these chemicals has only recently been possible due to advances in laboratory testing technology. Presently EPA has no health standards or guidelines for PPCPs in drinking water and does not require testing. In 2014 all of our wells were tested for 22 PPCPs, Carbamazepine, Dilantin, Gemfibrozil, Ibuprofen, Meprobamate, Naproxen and Phenobarbital were detected. The concentrations found are at levels far below medical doses, and have no known health effects. The analytical instrument used for this testing is shown below on the left.

Wherever possible, we are using granular activated carbon filtration and blending wells to remove these trace levels from the water we provide to you. Information on these pharmaceutical drugs and the results for each distribution area can be found on pages 34 through 42.


Triple Quad LC-MS 6490


Automated Solid Phase Extraction

SAFE DISPOSAL OF PHARMACEUTICALS

Pharmaceutical contamination of drinking water is an important emerging problem. Changing our practices today can prevent future pollution of our only source of drinking water. Suffolk County Water Authority has partnered with King Kullen, Citizens Campaign for the Environment and United Water to launch a first of its kind, cutting edge program for the public to safely and conveniently dispose of unwanted and expired medications. Become a part of the solution to help stop the threat of discarded pharmaceuticals finding their way into our groundwater, bays and estuaries. Simply take your unused medications to any of the safe disposal locations on Long Island. You can find a location near you on this interactive online map: http://www.citizenscampaign.org/campaigns/pharmaceutical-disposal/nassau-suffolk-locations.asp

ASBESTOS MONITORING

Asbestos-cement water mains are made from cement with asbestos fibers added to make the pipes strong. Although drinking water can pass through these pipes without becoming contaminated with asbestos fibers, asbestos fibers may be released through the wear or breakdown of these mains. The EPA has set the MCL for asbestos at 7.0 million fibers per Liter (MFL). Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps. Approximately, 2% of the SCWA's distribution system contains asbestos-cement pipes. Although testing is required every nine years, the SCWA tests every year.

In 2014 we monitored 45 sampling station locations where asbestos-cement pipes exist. One sample from Forks Rd in Bay Shore had 0.768 MFL of asbestos present, Scuttlehole Rd in Bridgehampton had 0.192 MFL of asbestos present, Silverbrook Dr in Flanders had 0.192 MFL of asbestos present, and Orinoco Dr in West Bay Shore had 0.576 MFL of asbestos present. All of these results were well below the 7.0 MFL MCL. All other locations were non-detect (no asbestos fibers present). The sampling stations at Forks Rd, Scuttlehole Rd, Silverbrook Dr and Orinoco Dr were placed on quarterly monitoring, and the results were non-detect for the three subsequent quarterly samples.

EDUCATIONAL INFORMATION

MICROBIOLOGICAL TESTING and MONITORING REQUIREMENTS

To reduce the risk of illness caused by microbial contamination the SCWA tests for total coliform bacteria, including E. coli. Total coliform bacteria is a conservative indicator of the potential for contamination from waste and provides a basis for investigation to determine and correct sanitary deficiencies. E. coli is a coliform bacteria that indicates fecal contamination and an immediate concern requiring prompt investigation. The Total Coliform Rule (TCR) and Ground Water Rule (GWR) are EPA regulations that require us to test our distribution system for total coliform bacteria. When there is a total coliform-positive result found in a distribution system sample, we are then required to test our wells in the surrounding area. This is called Triggered Source Water monitoring. In 2014, all Triggered Source Water monitoring samples were total coliform-negative (no coliforms, including E. coli were found).

Total Coliform Rule (TCR) and Ground Water Rule (GWR) Monitoring

In 2014 we collected an average of 952 total coliform samples each month, including samples from East Farmingdale, Riverside, and Stony Brook Water Districts. The number of samples required is based on the population in each distribution area.

Large distribution areas (40 or more total coliform samples collected monthly), shown in Table I below, must report the highest percentage of positive samples collected in any one month. Small distribution areas (40 or less total coliform samples collected monthly), shown in Table II below, must report the highest number of positive samples.

2014 Microbiological Test Results for Distribution

TABLE I – Microbiological Test Results
For Large Water Distribution Areas

Compound	Violation	MCL	MCLG	Unit Measure	Likely Source
Total Coliform Bacteria	Yes/No	Presence of Coliform in 5% of Monthly Samples	0	n/a	Naturally Present in the Environment
Distribution Area		**Highest Monthly Percentage Positive**	**Lowest Monthly Percentage Positive**	**Average Monthly Percentage Positive**	**No. of Tests for the Year**
1	No	0.5 %	0 %	0.1%	2,312
6	No	2.3 %	0 %	0.4%	491
12	No	0.6 %	0 %	0.1%	1,933
15	No	0.8 %	0 %	0.1%	1,541
20	No	1.0 %	0 %	0.1%	1,158
23	No	1.3 %	0 %	0.1%	870

Distribution Area 10 had no detections of total coliform in 2014.

TABLE II – Microbiological Test Results
For Small Water Distribution Areas

Compound	Violation	MCL	MCLG	Unit Measure	Likely Source
Total Coliform Bacteria	Yes/No	Two or More Positive Samples	0	n/a	Naturally Present in the Environment
Distribution Area		**Highest Monthly Amount Positive**	**Lowest Monthly Amount Positive**	**Average Monthly Amount Positive**	**No. of Tests for the Year**
7	No	1	0	0.7 %	150

Distribution Areas 4, 5, 8, 9, 11, 14, 26, 30, 32, 35, 39, 44, 53, 54, 55, 57, Stony Brook WD, Riverside WD, and East Farmingdale WD had no detections of total coliform in 2014.

Heterotropic Plate Count (HPC)

We also test every filtration system and water storage tank for total coliform and perform Heterotrophic Plate Count (HPC) measurements. Since most bacteria, including many of the bacteria associated with drinking water systems, are heterotrophs, this test can provide useful information about water quality. In 2014 the HPC results for our storage tanks were negative (no heterotrophs were found). The HPC results for our filter systems can be found in the 2015 Drinking Water Quality Report Supplement. Please see page 6 for more information on this report.

Bacteriological Test Results

EDUCATIONAL INFORMATION

Well Monitoring for Total Coliform

In addition, all SCWA wells prior to chlorination (source water monitoring) and the chlorinated water leaving the pump stations are tested quarterly for total coliform bacteria as required. As part of the GWR, EPA also requires reporting E. coli when found in source water monitoring. In 2014, all source water monitoring samples were E. coli-negative (no E. coli was found), except as noted in the chart below. Additional samples from these wells were total coliform-negative (no coliforms, including E. coli were found), and no sanitary deficiencies were found. In 2014, all samples collected after chlorination were total coliform-negative (no coliforms, including E. coli were found), except as noted in the chart below. Additional samples from these wells were total coliform-negative (no coliforms, including E. coli were found), and no sanitary deficiencies were found.

2014 Microbiological Test Results for Wells

Well Location	Collection Point at Pump Station	Test Results
Distribution Area 6*	Raw (prior to chlorination)	Total coliform-positive, E. coli-positive
Distribution Area 15*	Raw (prior to chlorination)	Total coliform-positive, E. coli-positive
Distribution Area 23*	Raw (prior to chlorination)	Total coliform-positive, E. coli-positive
Distribution Area 30*	Raw (prior to chlorination)	Total coliform-positive, E. coli-positive

** Please see map on pages 32 and 33 for the distribution area location*

June 2014 Fire Island Water Alert - System Found Safe

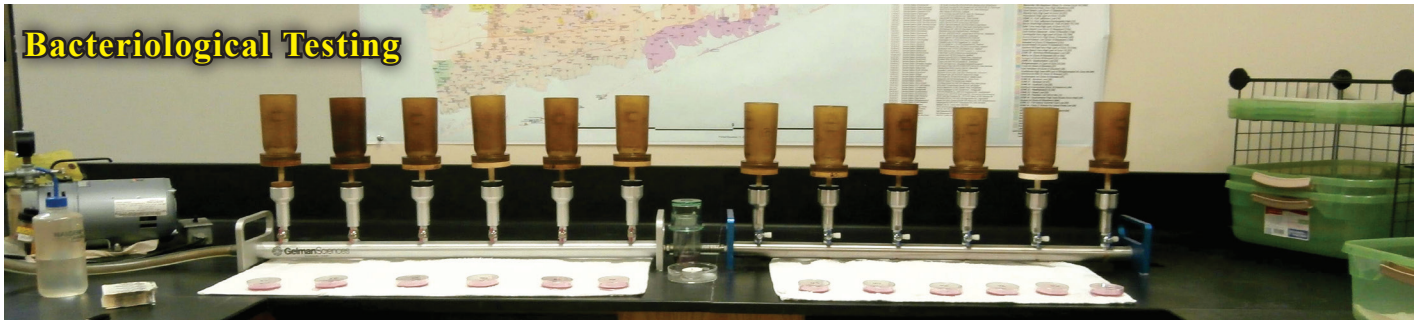
On June 21, 2014 the SCWA issued a Drinking Water Warning for the Fire Island communities of Ocean Bay Park and Point O' Woods indicating the presence of E. Coli in water samples collected by the Suffolk County Department Health Services on June 19th and June 20th. The SCWA and SCDHS conducted independent testing on June 21st and June 22nd throughout the distribution system and public supply wells. Based on the Total Coliform negative results identified during the extensive testing by both groups, the boil water advisory was rescinded on June 23, 2014. A thorough investigation was performed by the SCDHS, but the cause of the event could not be determined.

Chlorine Residual Monitoring (Tier 3) and Treatment Technique (Tier 2) Violations

The Suffolk County Water Authority is required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. On November 9, 2011 a new regulation to address the Ground Water Rule went into effect in New York State. In order to comply with this rule, the Authority uses continuous, on-line chlorine analyzers. Approximately 12 of the Authority's 234 pump stations do not currently have continuous chlorine analyzers. The Ground Water Rule requires daily grab samples for these sites. During the period November 9, 2011 through the second quarter of 2015, there were several occasions when grab samples were not taken for chlorine residual at these sites, and therefore the Authority cannot be sure of the chlorine residual of the drinking water at the entry point to the distribution system at these sites on those days.

A review of SCWA records also indicates that at two locations violations occurred under the Ground Water Rule. At the Pleasant Avenue pump station in Centereach the presence of a pre-lube bypass allowed a small amount of water with no free chlorine residual to flow from the high pressure zone into the intermediate pressure zone. At the Watch Hill well at Fire Island, on at least one occasion the well ran for more than four hours when the chlorine residual was less than required at the entry point to the distribution system. These situations have been corrected. Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches. In addition to entry point sampling, SCWA conducts daily distribution system monitoring for chlorine residual in accordance with health department regulations. This monitoring indicates that a chlorine residual was present in the distribution system whenever a sample was taken.

EDUCATIONAL INFORMATION



STAGE 2 DISINFECTANTS and DISINFECTION BYPRODUCTS RULE (Stage 2 DBPR) MONITORING

The SCWA is required to use a disinfectant to reduce the potential of microbial contamination. Minute amounts of chlorine are used to prevent bacterial growth in our distribution system. Disinfectants, such as chlorine, can react with the naturally occurring components in water to form byproducts referred to as disinfection byproducts (DBPs). DBPs, if consumed in excess of the MCLs over many years, may lead to increased health risks. To increase public health protection by reducing the potential risk of adverse health effects associated with DBPs from the required chlorination of our drinking water, the SCWA tests for two types of DBPs - Trihalomethanes (THMs) and Haloacetic Acids (HAAs). The MCL is 80 ppb for the sum of the four THMs, and for the sum of five HAAs the MCL is 60 ppb.

The Stage 2 Disinfectant and Disinfection Byproducts Rule (DBPR) is an EPA regulation that requires us to monitor our distribution system quarterly for four THMs (chloroform, bromodichloromethane, dibromochloromethane, and bromoform) and five HAAs (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, bromoacetic acid, and dibromoacetic acid). The chart below includes the range of quarterly results for the sum of the two groups of DBPs and the highest Locational Running Annual Average as required. The SCWA also monitors the wells and storage tanks for various other DBPs, including chlorate and four additional HAAs. The 2014 disinfection byproducts results for each distribution area are noted on pages 34 through 42.

2014 Stage 2 DBPR Test Results

Detected Compound		Total Trihalomethanes				Haloacetic Acids			
Likely Source		Byproduct of chlorination				Byproduct of chlorination			
MCL		80				60			
MCLG		N/A				N/A			
Unit of Measure		ug/L				ug/L			
		Range of Readings				Range of Readings			
Location	Sample Site	Low Value	High Value	Annual Average	No. of Tests	Low Value	High Value	Annual Average	No. of Tests
SCWA	1	1.79	6.03	4.30	4	ND	0.53	ND	4
	2	1.92	6.14	4.70	4	ND	1.81	0.74	4
	3	ND	3.18	2.10	4	ND	ND	ND	4
	4	6.41	32.56	20.21	4	0.42	4.11	1.98	4
	5	7.25	21.55	16.34	4	1.35	4.39	2.90	4
	6	3.27	16.20	8.58	4	ND	1.33	0.83	4
	7	0.63	6.63	2.42	4	ND	0.69	ND	4
	8	0.52	5.29	2.38	4	0.50	4.79	2.33	4
FHWD	1	0.61	4.47	2.55	4	ND	5.77	2.54	4
	2	0.45	8.52	3.28	4	0.42	7.58	3.08	4
EFWD	1	ND	ND	ND	4	ND	0.98	ND	4
	2	0.27	3.13	1.38	4	ND	0.45	ND	4
SBWD	1	1.46	4.36	2.97	4	ND	0.41	ND	4
	2	0.36	1.20	0.74	4	ND	ND	ND	4
RSWD	1	0.80	2.34	1.61	4	ND	ND	ND	4
	2	1.77	3.25	2.55	4	ND	ND	ND	4

EDUCATIONAL INFORMATION

LEAD

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. SCWA is responsible for providing high quality drinking water, but is not responsible for the variety of materials used in a homeowner's plumbing. If you haven't run your water for several hours, you can minimize the potential for lead exposure by running your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. To schedule a lead test, please contact our Customer Service Center (contact information listed on back page). Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at *www.epa.gov/safewater/lead*.

Lead and Copper Rule (LCR) Monitoring

This EPA regulation requires public water systems to monitor drinking water at specific customers' taps every three years. To check the effectiveness of our pH treatment and to ensure the quality of our drinking water the SCWA performs this testing every year. If lead levels exceed 15 parts per billion (ppb) or copper levels exceed 1.3 parts per million (ppm) in more than 10% of these samples, we must improve our corrosion control (pH treatment). Based on our 2014 LCR results, we have optimal corrosion control. Additional information on our pH treatment can be found on page 9.

2014 Lead and Copper Test Results

The values reported below for lead and copper represent the 90th percentile of the total number of samples collected in each water system. A percentile is a value on a scale of 100 that indicates the percentage of a distribution that is equal to or below it.

Compound	Unit of Measure	MCLG	Action Level	Likely Source
Lead	ug/l	0	15.	Household plumbing

Location	Violation Yes/No	Date of Sampling	Number of Samples	Results ug/l	90th Percentile Value (ug/l)[1,2]	No. of Samples Over Action Level
SCWA	No	8/4-9/9	61	ND-2.97	1.20	0
Fire Island	No	7/11-9/23	25	ND-7.67	4.84	0
Stony Brook	No	8/25-9/5	23	ND-3.65	1.18	0
Riverside	No	8/12-8/27	12	ND-ND	<1.00	0
E. Farmingdale	No	8/19-9/2	20	ND-3.17	1.15	0

(1) - The 90th percentile value is equal to or greater than 90% of the lead values detected in the water system.

(2) - In this case, 141 total samples were collected from the water systems shown above and the 90th percentile values ranged from ND to 4.84 ug/l for lead. The action level for lead was not exceeded at any of the 141 sites tested.

Compound	Unit of Measure	MCLG	Action Level	Likely Source
Copper	mg/l	1.3	1.3	Household plumbing

Location	Violation Yes/No	Date of Sampling	Number of Samples	Results mg/l	90th Percentile Value (mg/l)[1,2]	No. of Samples Over Action Level
SCWA	No	8/4-9/9	61	ND-0.595	0.303	0
Fire Island	No	7/11-9/23	25	0.024-0.780	0.611	0
Stony Brook	No	8/25-9/5	23	0.069-0.538	0.341	0
Riverside	No	8/12-8/27	12	0.034-0.248	0.117	0
E. Farmingdale	No	8/19-9/2	20	0.036-0.424	0.294	0

(1) - The 90th percentile value is equal to or greater than 90% of the copper values detected in the water system.

(2) - In this case, 141 total samples were collected from the water systems shown above and the 90th percentile values ranged from 0.117 to 0.611 ug/l for copper. The action level for copper was not exceeded at any of the 141 sites tested.


Sample Collection at Well


Distribution System Sample Collection

EDUCATIONAL INFORMATION

LONG ISLAND COMMISSION FOR AQUIFER PROTECTION - LICAP

The Long Island Commission for Aquifer Protection (LICAP) is a bi-county entity formed to address both quality and quantity issues facing Long Island's aquifer system, and to advocate for a coordinated, regional approach to groundwater resources management. It is comprised of both voting and non-voting members of public water suppliers, health officials, elected officials, environmental officials, academia and the general public. Collectively these individuals represent 3 million people who reside in Nassau and Suffolk County and rely on the groundwater beneath each county as their sole source of drinking water.

LICAP's primary purpose is to report on the state of our aquifer and recommend additional proactive measures that should be taken to safeguard our aquifer system for future generations. To accomplish this, LICAP established two subcommittees, the 2040 Water Resources and Infrastructure Subcommittee (2040 WRIS) and the Water Resource Opportunities Subcommittee (WROS). A Water Quality Management Working Group has also been established to facilitate sharing of water quality data island-wide. LICAP will produce an annual State of the Aquifer Report and a Groundwater Resources Management Action Plan by 2017.

Since its creation by both the Nassau and Suffolk County Legislatures at the end of 2013, LICAP has held five full commission meetings, six subcommittee meetings, and two public hearings, one each in Nassau and Suffolk County. The full commission meets quarterly, the subcommittees meet bimonthly, and at least one public hearing is held annually in each county.

All meetings of LICAP are open to the public. For more information on LICAP please visit the website http://www.liaquifercommission.com/home.html.

Long Island Commission on Aquifer Protection

RADIONUCLIDES and RADIOLOGICAL MONITORING

Gross Alpha and Gross Beta

Most drinking water sources have very low levels of naturally occurring radioactive elements called radionuclides. These levels are low enough not to be considered a public health concern. Radionuclides can be present in several forms called isotopes which emit different types of radioactive particles called alpha or beta. Radioactivity in water is measured in picoCuries per liter (pCi/L). The EPA has set the maximum contaminant level (MCL), the highest level allowed in drinking water, for gross alpha (all alpha emitters except uranium and radon) at 15 pCi/L. NYS considers 50 pCi/L of gross beta activity to be the level of concern for gross beta. The gross alpha and gross beta results for each distribution area are noted in the chart on page 19.

Tritium

Some radionuclides emit gamma (also called photon) radiation. Common byproducts from nuclear reactors and waste, such as cesium-137, emit gamma radiation (also called photon emitters). Due to differences in energy levels, the MCL in pCi/L for a particular photon emitter will depend on the type of radionuclide present. Tritium, a radioactive isotope of the element hydrogen, is a weak beta emitter. It occurs naturally in the environment in very low concentrations, and may also be produced during nuclear weapon explosions and as a byproduct from nuclear reactors. The EPA has set a 20,000 pCi/L MCL for tritium.

In 2014 we monitored 30 wells near Brookhaven National Laboratory for gross alpha and beta particles, tritium, and gamma radiation. These wells are located in distribution areas 12, 20, and 39. The gross alpha and gross beta results for these areas are listed in the chart on page 19. There were no detections of tritium or gamma radiation in the 76 samples tested.

Radium-226 and Radium-228

Radium, a naturally radioactive metal, occurs at very low levels in virtually all rock, soil, water, plants, and animals. Radium-226 and radium-228 are isotopes of radium. The EPA has set a combined MCL of 5 pCi/L for radium-226 and radium-228. If radium-226 is not tested, the gross alpha measurement is substituted for radium-226 to determine compliance with the MCL. Some people who drink water containing radium-226 or radium-228 in excess of the MCL over many years may have an increased risk of getting cancer.

From October 2007 through 2009, we monitored a well in each aquifer at all our well fields for gross alpha, gross beta and radium-228 as required, and presented the results for each year in our Drinking Water Quality Reports. Since that time, quarterly monitoring at new well fields or at new wells placed at a well field where the aquifer had not been monitored previously and continuing monitoring on existing wells as required has been performed. The results for each distribution area are noted in the chart on page 19.

EDUCATIONAL INFORMATION

Radon

Radon, a naturally occurring radioactive gas found in soil and outdoor air, may also be found in drinking water and indoor air. Some people exposed to elevated radon levels from sources including drinking water may, over many years, have an increased risk of developing cancer. The main risk from radon is lung cancer entering indoor air from soil under homes. For further information, call the state radon program at (800) 458-1158 or call the EPA's Radon Hotline at (800) SOS-Radon.

In 2014 we monitored for radon at 80 locations throughout our distribution system. The results for each distribution area are noted in the chart shown below. The test results ranged from non-detect (no radon found) to 239.4 pCi/L of radon. Currently there is no MCL for radon. The EPA is proposing to require water suppliers to provide water with levels no higher than 4,000 pCi/L of radon.

2014 RADIOLOGICAL TEST RESULTS

Detected Compound	GROSS ALPHA				GROSS BETA				RADON-222				RADIUM-226				RADIUM-228			
Likely Source	Erosion of Natural Deposits				Natural deposits, man-made emissions				Naturally occurring radioactive gas				Erosion of Natural Deposits				Erosion of Natural Deposits			
MCL	15				50				N/A				5				5			
MCLG	0				0				0				0				0			
Unit of Measure	pCi/L				pCi/L				pCi/L				pCi/L				pCi/L			
	Range of Readings				Range of Readings				Range of Readings				Range of Readings				Range of Readings			
Distribution Area	Low Value	High Value	Average Value	No. of Tests	Low Value	High Value	Average Value	No. of Tests	Low Value	High Value	Average Value	No. of Tests	Low Value	High Value	Average Value	No. of Tests	Low Value	High Value	Average Value	No. of Tests
1	ND	ND	ND	18	ND	ND	ND	18	ND	138.3	ND	10	ND	ND	ND	8	ND	ND	ND	8
4	ND	ND	ND	1	ND	ND	ND	1	ND	ND	ND	1	NA	NA	NA	0	NA	NA	NA	0
5	ND	ND	ND	2	ND	2.26	ND	2	220.2	220.2	220.2	1	ND	ND	ND	1	ND	ND	ND	1
6	ND	2.00	ND	5	ND	ND	ND	5	165.7	166.5	166.1	2	ND	ND	ND	3	ND	ND	ND	3
7	ND	ND	ND	2	ND	ND	ND	2	116.7	116.7	116.7	1	ND	ND	ND	1	2.09	2.09	2.09	1
8	ND	ND	ND	1	ND	ND	ND	1	ND	ND	ND	1	NA	NA	NA	0	NA	NA	NA	0
9	ND	ND	ND	2	ND	ND	ND	2	ND	118.4	ND	2	NA	NA	NA	0	NA	NA	NA	0
10	ND	1.80	ND	6	ND	ND	ND	6	ND	ND	ND	2	ND	ND	ND	4	ND	ND	ND	4
11	ND	2.53	ND	13	ND	ND	ND	13	ND	102.2	ND	2	ND	1.50	ND	11	ND	1.75	ND	11
12	ND	4.45	ND	64	ND	3.50	ND	64	ND	165.0	ND	13	ND	ND	ND	12	ND	ND	ND	12
14	ND	ND	ND	3	ND	ND	ND	3	ND	ND	ND	2	ND	ND	ND	1	ND	ND	ND	1
15	ND	ND	ND	17	ND	ND	ND	17	ND	128.2	ND	6	ND	ND	ND	11	ND	ND	ND	11
20	ND	2.12	ND	41	ND	2.98	ND	41	ND	ND	ND	5	ND	ND	ND	5	ND	ND	ND	5
23	ND	ND	ND	11	ND	3.14	ND	11	ND	199.9	125.2	6	ND	ND	ND	5	ND	ND	ND	5
26	ND	ND	ND	4	ND	ND	ND	4	ND	239.4	113.1	3	ND	ND	ND	1	ND	ND	ND	1
30	ND	ND	ND	11	ND	2.91	ND	11	ND	ND	ND	3	ND	ND	ND	8	ND	ND	ND	8
32	ND	ND	ND	1	ND	ND	ND	1	ND	ND	ND	1	NA	NA	NA	0	NA	NA	NA	0
35	ND	ND	ND	1	ND	ND	ND	1	ND	ND	ND	1	NA	NA	NA	0	NA	NA	NA	0
39	ND	ND	ND	6	ND	ND	ND	6	ND	ND	ND	1	ND	ND	ND	3	ND	ND	ND	3
44	ND	ND	ND	1	ND	ND	ND	1	ND	ND	ND	1	NA	NA	NA	0	NA	NA	NA	0
53	ND	ND	ND	4	ND	ND	ND	4	ND	ND	ND	4	NA	NA	NA	0	NA	NA	NA	0
54	ND	ND	ND	4	ND	ND	ND	4	ND	ND	ND	4	NA	NA	NA	0	NA	NA	NA	0
55	ND	ND	ND	1	ND	ND	ND	1	ND	ND	ND	1	NA	NA	NA	0	NA	NA	NA	0
57	ND	ND	ND	8	ND	ND	ND	8	ND	157.9	104.0	2	ND	ND	ND	6	ND	ND	ND	6
EFWD	ND	ND	ND	2	ND	ND	ND	2	ND	ND	ND	2	NA	NA	NA	0	NA	NA	NA	0
RSWD	ND	ND	ND	1	ND	ND	ND	1	ND	ND	ND	1	NA	NA	NA	0	NA	NA	NA	0
SBWD	ND	ND	ND	2	ND	ND	ND	2	103.2	123.8	113.5	2	NA	NA	NA	0	NA	NA	NA	0

EDUCATIONAL INFORMATION


Volatile Organics Testing


Semi-Volatile Organics Testing

IRON

Iron is naturally occurring in ground water and has no adverse health effects. At 1,000 ppb (parts per billion) of iron a substantial number of people will note a bitter astringent taste. Also, at this level, it imparts a brownish color to laundered clothing and stains plumbing fixtures with a characteristic rust color. Staining can result at 50 ppb of iron, which is lower than detectable to taste buds. Therefore, an MCL of 300 ppb represents a reasonable compromise as adverse aesthetics effects are minimized at this level. Many multivitamins may contain 3,000 or 4,000 micrograms (ppb) of iron per capsule. Additional information on our iron removal, treatment and water main flushing can be found on page 9, and the 2014 iron results for each distribution area are noted on pages 34 through 42.

MONITORING FOR TASTE AND ODOR CAUSING COMPOUNDS

IPMP (2-isopropyl-3-methoxypyrazine), produced by specific types of soil bacteria, causes a "raw potato" like taste and/or odor in drinking water. Some individuals may be sensitive to the taste and odor of IPMP at extremely low levels. There are no known health effects from this compound, nor has an MCL been set by EPA. Two wells in Coram have IPMP, and in 2012 a filtration system to remove IPMP from the water was placed in operation. In addition to IPMP, two other odor-causing compounds were also tested for. In 2014, the filtered water results for the two wells in Coram were non-detect or no IPMP or odor-causing compounds were found in all samples.

NITRATE

Nitrate, commonly found in drinking water, has an MCL of 10 mg/L (milligrams per liter). This means that 10 mg/L is the highest level of nitrate allowed in drinking water. Nitrate in drinking water at levels above 10 mg/L is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue-baby syndrome, where the blood's ability to carry oxygen is inhibited. Please note that there has never been a recorded case of blue-baby syndrome in Suffolk County. If your water contains nitrate above 5 mg/L (half of the current MCL) but below 10 mg/L, and you are caring for an infant under the age of six months, you should ask for advice from your health care provider. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. Annual nitrate monitoring of the distribution system and at wells where the level is less than 5 mg/L is required. Quarterly monitoring is required at wells where the nitrate level is 5 mg/L or greater. To ensure the quality of our drinking water, we monitor more frequently than required. The 2014 nitrate results for each distribution area are noted on pages 34 through 42.

SPECIAL INFORMATION FOR IMMUNO-COMPROMISED INDIVIDUALS

Some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbiological contaminants are available from the EPA's Safe Drinking Water Hotline at (800) 426-4791. Individuals who think they may have cryptosporidiosis or giardiasis should contact their health care providers immediately. New York State law requires water suppliers to notify their customers about the risks of cryptosporidiosis and giardiasis. Cryptosporidiosis and giardiasis are intestinal illnesses caused by microscopic parasites found in surface water and groundwater under the influence of surface water. There have been no known outbreaks of cryptosporidiosis or giardiasis linked to any public water supplies in Suffolk County. For more information on cryptosporidiosis and giardiasis, please contact the Suffolk County Department of Health Services at (631) 852-5810.