



Borough of Spring Lake

Annual Drinking Water Quality Report



PWS ID # NJ1348001

423 Warren Avenue, Spring Lake, New Jersey 07762

For the Year 2017, Results from the Year 2016

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. We have three wells and we purchase water from the New Jersey Water Supply Authority, Manasquan Reservoir Water Supply System. Our wells draw their water from the Englishtown Aquifer and are approximately 700 feet deep. The Manasquan Water Treatment Plant, located on Hospital Road in the Allenwood section of Wall Township, is owned by the Monmouth County Improvement Authority and is operated by the New Jersey Water Supply Authority. The Manasquan Water Treatment Plant takes its water from the Manasquan River in Wall Township and the Manasquan Reservoir in Howell Township.

The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for this public water system, which is available at WWW.state.nj.us/dep/swap or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550. You may also contact your public water system to obtain information regarding your water system's Source Water Assessment. The source water susceptibility ratings and a list of potential contaminant sources for these water systems is included.

Some people may be more vulnerable to contaminants 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 about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

The Spring Lake Borough Water and Sewer Utility and the Manasquan Water Supply System routinely monitor for contaminants in your drinking water according to Federal and State laws. The table shows the results of our monitoring for the period of January 1st to December 31st, 2016. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

Spring Lake Borough Test Results						
	Viola- tion Y/N	Level Detected	Units of Measure- ment	MC LG	MCL	Likely Source of Contamination
Radioactive Contaminants:						
Combined Radium 228 & 226 Test results Yr. 2015	N	1.5	pCi/l	0	N/A	Erosion of natural deposits
Inorganic Contaminants:						
Copper Test results Yr. 2015 Result at 90 th Percentile	N	0.2 No samples exceeded the action level.	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Nitrate (as Nitrogen) Test results Yr. 2016	N	0.2	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Lead Test results Yr. 2015 Result at 90 th Percentile	N	2 No samples exceeded the action level.	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Disinfection Byproducts:						
TTHM Total Trihalomethanes Test results Yr. 2016	N	Range = 4 - 48 Highest LRAA = 26	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acidss Test results Yr. 2016	N	Range = 3 - 39 Highest LRAA = 23	ppb	N/A	60	By-product of drinking water disinfection
Regulated Disinfectants		Level Detected		MRDL		MRDLG
Chlorine Test results Yr. 2016		Average = 1.2 ppm		4.0 ppm		4.0 ppm

HAA5 and TTHM compliance is based on a Locational Running Annual Average (LRAA), calculated at each monitoring location. The LRAA calculation is based on four completed quarters of monitoring results.

Lead: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Borough of Spring Lake Water & Sewer Utility and the Manasquan Water Supply System are responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 second to 2 minutes before using water for drinking and cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water hotline or at <http://www.epa.gov/safewater/lead>.

If you have any questions about this report or concerning your water utility, please contact Michael McArthur at 732-904-5943. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled Borough Council meetings at Borough Hall, Fifth and Warren Avenues, meetings are held the second and fourth Tuesday of every month at 7:00 p.m. unless noticed otherwise.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds reservoirs, springs, and wells. 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 from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can, also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

DEFINITIONS

In the following table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal -The "Goal"(MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Secondary Contaminant- Substances that do not have an impact on health. Secondary Contaminants affect aesthetic qualities such as odor, taste or appearance. Secondary standards are recommendations, not mandates.

Recommended Upper Limit (RUL) – Recommended maximum concentration of secondary contaminants. These reflect aesthetic qualities such as odor, taste or appearance. RUL's are recommendations, not mandates.

Maximum Residual Disinfectant Level (MRDL) - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): - The level of a drinking water disinfectant, below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Total Organic Carbon (TOC) - We are required to remove a certain percentage of (TOC) from our drinking water on a monthly basis. Total Organic Carbon has no adverse health effects. However, TOC provides a medium for the formation of disinfection byproducts.

Turbidity – A measure of the particulate matter or “cloudiness” of the water. High turbidity can hinder the effectiveness of disinfectants.

The Borough of Spring Lake Water & Sewer Utility participated in monitoring for unregulated contaminants under the Unregulated Contaminant Monitoring Rule (UCMR). Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether regulation is warranted. Our results are available upon request. We found the substances listed below.

Contaminant	Level Detected	Units of Measurement	Likely source
1,4-Dioxane	Range = ND – .26	ppb	Cyclic aliphatic ether; used as a solvent or solvent stabilizer in manufacturing and processing of paper, cotton, textile products, automotive coolant, cosmetics and shampoos
Chlorate	Range = 29 - 220	ppb	Agricultural defoliant of desiccant; disinfection byproduct; used in the production of chloride dioxide
Chromium	Range = ND – 0.2	ppb	Naturally-occurring element; used in the making of steel and other alloys; chromium -3 or -6 are used for chrome plating, dyes and pigments, leather tanning, and other wood preservation
Chromium (VI)	Range = ND – 0.12	ppb	Naturally-occurring element; used in the making of steel and other alloys; chromium -3 or -6 are used for chrome plating, dyes and pigments, leather tanning, and other wood preservation

Strontium	Range = 48 - 400	ppb	Naturally-occurring element; historically commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
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2016 Water Quality Report

MANASQUAN WATER SUPPLY SYSTEM PWSID 1352005

A division of the New Jersey Water Supply Authority, serving the customer communities of BRIELLE, SEA GIRT, SPRING LAKE, SPRING LAKE HEIGHTS AND WALL TOWNSHIP

The Manasquan Water Treatment Plant, located on Hospital Road in the Allenwood section of Wall Township, is owned by the Southeast Monmouth Municipal Utilities Authority and is operated by the New Jersey Water Supply Authority. The Manasquan Water Treatment Plant provides an average of 60% of the water used by the residents of the above customer communities. Raw water for this facility is taken from the MANASQUAN RIVER in Wall Township and the MANASQUAN RESERVOIR in Howell Township. The Manasquan Water Supply System also provides raw water to New Jersey American Water, for treatment and distribution to other communities in Monmouth and Ocean Counties.

The water produced by the Manasquan Water Treatment Plant is monitored for a large number of contaminants. The contaminants, which have been detected in monitoring from January 1st, 2016 through December 31st, 2016, are listed in the **TEST RESULTS** tables below.

For the complete monitoring schedule or for further information about this report, you can contact Operations Supervisor Donald LeRoy or System Manager Paul McKeon at the Manasquan Water Supply System. Telephone - 1-732-974-8383; Fax - 1-732-974-8607 or E-mail - dleroy@niwsa.org or pmckeont@niwsa.org.

This report is available at <http://www.niwsa.org/onwssccr.pdf>

MANASQUAN WATER SUPPLY TEST RESULTS TABLE							
CONTAMINANT	HIGHEST LEVEL DETECTED	RANGE DETECTED	UNIT OF MEASUREMENT	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION	VIOLATION
MICROBIOLOGICAL CONTAMINANTS 2016							
TOTAL COLIFORM BACTERIA	0	0	%	0	5% OF SAMPLES POSITIVE	NATURALLY PRESENT IN THE ENVIRONMENT	NO
SUSPENDED MATTER REMOVAL 2016							
TOTAL CARBON (TOC)	ANNUAL AVERAGE REMOVAL 35.3	MONTHLY STAMPLES	%	N/A	TT REQUIRED REMOVAL MINIMUM IS 35% TO 45% OF AVERAGE RAW WATER TOC OR 0% IF THM AND HAA RESULTS ARE BELOW A PERCENTAGE OF THEIR MCL	NATURALLY PRESENT IN THE ENVIRONMENT	NO
	MINIMUM REMOVAL 15.5	15-48	%	N/A			
TURBIDITY	MAXIUMUM	0.03-0.44	NTU	N/A	>1 NTU (1.49)	SOIL AND ORGANIC	NO

FILTERED WATER	0.44				DUE TO ROUNDING)	MATTER RUNOFF	
	Goal is for > 95% of samples to be <0.3NTU	>99.8% OF SAMPLES WERE <0.3NTU (Only 2 results out of 30,600 exceeded 0.30 NTU) Average= 0.05 NTU	%	N/A	TT=95% OF MONTHLY SAMPLES <0.3 NTU		

RADIOACTIVE CONTAMINANTS (RESULTS BASED ON DATA FROM 2011)

GROSS ALPHA EMITTERS	0.96	048-1.25	pCi/L	0	15	EROSION OF NATURAL DEPOSITS	NO
RADIUM 228	<1	ND- 0.18	pCi/L	0	5	EROSION OF NATURAL DEPOSITS	NO

INORGANIC CONTAMINANTS

TEST RESULTS TABLE

CONTAMINANT	HIGHTEST LEVEL DETECTED	RANGE DETECTED	UNIT OF MEASUREMENT	MCLG	MCL	LIKELY SOURCE OF CONTININATION	VIOLATION
BARIUM	0.039	0.039	PPM	2	2	EROSION OF NATURAL DEPOSITS	NO
FLUORIDE	0.20	0.20	PPM	4	4		

INORGANIC CONTAMINANTS

NITRATE	0.0987	0.0987	Mg/I	10	10	RUNOFF FROM FERTILIZER USE; INDUSTRIAL AND DOMESTIC WASTE WATER DISCHARGES; EROSION OF NATURAL DEPOSITS	NO
ASBESTOS	<0.093	<0.093	Million Fibers/Liter		7x10⁶ fibers/l>10 um	EROSION OF NATURAL DEPOSITS	NO

ORGANIC CONTAMINANTS

BROMATE	<0.005	N/A	Mg/I		0.010 RUNNING ANNUAL AVERAGE OF ONE MONTHLY SAMPLE	REACTION OF NATURALLY OCCURING BROMIDE WITH OZONE	NO
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TEST RESULTS TABLES

**DISINFECTANT/DISINFECTANT BY-PRODUCTS
(BASED ON SAMPLES OF WATER LEAVING THE PLANT AND IN THE DISTRUBUTION SYSTEM)**

CHLORINE	Highest Value 1.79	Range 1.07-1.79	PPM	4 MRDL GOAL	4 MRDL	WATER ADDITIVE USED TO	NO
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						CONTROL MICROBES	
TTHM (TOTAL TRIHALOMETHANES) FROM THE END OF THE DISTRIBUTION SYSTEM	HIGHEST SINGLE PARAMATER VALUE 19.9	<05-19.9	PPB	N/A	ANNUAL SITE SAMPLING 80	BY-PRODUCTS OF DRINKING WATER CHLORINATION	NO
HAA5 (HALOCETIC ACIDS) FROM THE END OF THE DISTRIBUTION SYSTEM	HIGHEST SINGLE PARAMATER VALUE 19	<1.0-19	PPB	N/A	ANNUAL SITE SAMPLING 60	BY-PRODUCT OF DRINKING WATER CHLORINATION	NO

MONITORING WAIVERS

The Safe Drinking Water Act regulations allow *monitoring waivers* to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals, and synthetic organic chemicals. The NJDEP conducted monitoring of synthetic organic chemicals (SOC) during 2012 that included sampling during storm conditions at our surface water intake. Based on these results, a waiver for the 2011- 2013 period was received. The waiver for the 2014-2016 period is under NJDEP review.

SECONDARY CONTAMINANTS/WATER QUALITY PARAMETERS				
CONTAMINANT OR PARAMETER	AVERAGE LEVEL DETECTED	UNIT OF MEASUREMENT	MCL (RUL)	LIKELY SOURCE OF CONTAMINATION
IRON	<0.05	Mg/l	0.3	EROSION OF NATURAL DEPOSITS
MANGANESE	0.015	Mg/l	0.05	EROSION OF NATURAL DEPOSITS
HARDNESS	84	Mg/l	50-250	N/A
SODIUM	20.6	Mg/L	50	EROSION OF NATURAL DEPOSITS; ROADWAY ICE AND SNOW CONTROL
ALUMINUM	<0.15	Mg/L	0.5	BASE ELEMENT OF ADDITIVE USED IN WATER TREATMENT
CHLORIDE	45	Mg/L	250	ROADWAY ICE AND SNOW CONTROL, SALT WATER INTRUSION INTO FRESH

				WATER
SECONDARY CONTAMINANTS/WATER QUALITY PARAMETERS				
CONTAMINANT OR PARAMETER	AVERAGE LEVEL DETECTED	UNIT OF MEASUREMENT	MCL (RUL)	LIKELY SOURCE OF CONTIMINATION
ZINC	0.341	Mg/L	5.0	CORROSION CONTROL ADDITIVE USED IN WATER TREATMENT ZINC-ORTHOPHOSPHATE
COPPER	<0.010	Mg/l	1.3	EROSION OF NATURAL DEPOSITS

Additional Inorganic compounds tested that could be the product of erosion, human activity, or natural deposits:

Anaiysis	Result	Units	MCL
Antimony	<0.0004	Mg/I	0.006
Arsenic	<0.0005	Mg/I	0.005
Barium	0.039	Mg/I	2.0
Beryllium	<0.0003	Mg/I	0.004
Cadmium	<0.0005	Mg/I	0.005
Chromium	<0.0005	Mg/I	0.1
Cyanide	<0.0050	Mg/I	0.2
Mercury	<0.0002	Mg/I	0.002
Nickel	0.001	Mg/I	0.1
Orthophosphate	0.128	Mg/I as P	
Total Dissolved Solids	206	Mg/I	500
Selenium	<0.0025	Mg/I	0.05
Sulfate	31.6	Mg/I	250
Silver	<0.002	Mg/I	0.1
MBAS	<0.1	Mg/I	0.5
Thallium	<0.0003	Mg/I	0.002

Information on the hardness of water in “grains per gallon” can improve the function of dishwashers, cooling equipment, and other process applications. To conveit the Hardness value shown above into grains per gallon, divide the Hardness value in milligrams per liter by 17.

Volatile Organic Compounds results required for the three year cycle of 2014 through 2016 were reported with the 2015 CCR which referenced 2014 results. Below are the results of another set of samples that were tested in 2016:

ANALYSIS	RESULT	UNITS	MCL
Volatile Organic Compounds Method: 524.2: page 1 of 3			
Dichlorodifluoromethane	<0.5	ug/I	
Chloromethane	<0.5	ug/I	
Vinyl Chloride	<0.5	ug/I	2
Bromomethane	<0.5	ug/I	
Chloroethane	<0.5	ug/I	
Trichlorbfluoromethane	<0.5	ug/I	

I,i-Dichloroethylene	<0.5	ug/I	2
Methylene Chloride	<0.5	ug/I	3
Methyl ter-Butyl Ether	<0.5	ug/I	70
t-1,2-Dichloroethylene	<0.5	ug/I	100
Isopropyl Ether	<0.5	ug/I	
I,I-Dichloroethane	<0.5	ug/I	50
2,2-Dichloropropane	<0.5	ug/I	
Cis-1, 2-Dichloroethylene	<0.5	ug/I	70
Chloroform	13.0	ug/I	
Bromochloromethane	<.05	ug/I	
1,1,1-Trichloroethane	<0.5	ug/I	30
1,1-Dichloropropylene	<0.5	ug/I	
Carbon Tetrachloride	<0.5	ug/I	2
Benzene	<0.5	ug/I	1
T,2-Dichloroethane	<0.5	ug/I	2
Trichloroethylene	<0.5	ug/I	1
1,2-Dichloropropane	<0.5	ug/I	5
Bromodichloromethane	6.7	ug/I	

< = less than, not detected.

NJ WATER SUPPLY AUTHORITY- MANASQUAN SYSTEM- PWSID #NJ1352005

NJ Water Supply Authority- Manasquan System is a public community water system consisting of 2 surface water intakes.

This system's source water comes from the following surface water bodies: Manasquan Reservoir, Manasquan River

Susceptibility Ratings for NJ Water Supply Authority- Manasquan System Sources

The table below illustrates the susceptibility ratings for the seven contaminant categories (and radon) for each source in the system. The table provides the number of wells and intakes that rated high (H), medium (M), or low (L) for each contaminant category. For susceptibility ratings of purchased water, refer to the specific water system's source water assessment report.

The seven contaminant categories are defined at the bottom of this page. DEP considered all surface water highly susceptible to pathogens, therefore all intakes received a high rating for the pathogen category. For the purpose of Source Water Assessment Program, radionuclides are more of a concern for ground water than surface water. As a result, surface water intakes' susceptibility to radionuclides was not determined and they all received a low rating.

If a system is rated highly susceptible for a contaminant category, it does not mean a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, DEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radionuclides			Radon			Disinfection Byproduct Precursors		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L			
Surface Water Intakes- 2	2				2			2			2			2				2			2			

Pathogens: Disease-causing organisms such as bacteria and viruses. Common sources are animal and human fecal wastes.

Nutrients: Compounds, minerals, and elements that aid growth, that are both naturally occurring and man-made. Examples include nitrogen and phosphorus.

Volatile Organic Compounds: Man-made chemicals used as solvents, degreasers, and gasoline components. Examples include benzene, methyl tertiary butyl ether (MTBE), and vinyl chloride.

Pesticides: Man-made chemicals used to control pests, weeds, and fungus. Common sources include land application and manufacturing centers of pesticides. Examples include herbicides such as atrazine, and insecticides such as chlordane.

Inorganics: Mineral-based compounds that are both naturally occurring and man-made. Examples include arsenic, asbestos, copper, lead, and nitrate.

Radionuclides: Radioactive substances that are both naturally occurring and man-made. Examples include radium and uranium.

Radon: Colorless, odorless, cancer-causing gas that are both naturally occurring and man-made. Examples include radium and uranium. <http://www.nj.gov/dep/rpp/radon/index.htm> or call (800) 648-0394

Disinfection Byproduct Precursors: A common source is naturally occurring organic matter in surface water. Disinfection byproducts are formed when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

DEFINITIONS :

In the preceding Test Results table you will find terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Non-Detects (ND) - laboratory analysis indicates that the constituent is not detectable above the minimum detection level for that analysis method.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Action Level - The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.

MBAS - Methylene blue active substances assay - is a colorimetric analysis test method that uses methylene blue to detect the presence of anionic surfactants (such as a detergent or foaming agent) in a sample of water.

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL) - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Total Organic Carbon - Total Organic Carbon has no health effects. However, total organic carbon provides a medium for the formation of *Disinfection By-products*. The *Treatment Technique* for total organic carbon requires that 35% to 45% of the total organic carbon in the raw water is removed through the treatment processes.

Turbidity - Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity is measured as an indication of the effectiveness of the filtration

process. The *Treatment Technique* for turbidity requires that no individual sample exceeds 1 NTU and 95% of the samples collected during a month must be less than 0.3 NTU.

TTHM - Total Trihalomethanes are carcinogenic compounds created when Chlorine is added to water as a disinfectant. The *MCL* for TTHM's requires that one annual sample from an approved location does not exceed 80 *parts per billion*.

Secondary Contaminant - Substances that do not have an impact on health. Secondary Contaminants affect aesthetic qualities such as odor, taste or appearance. Secondary standards are recommendations, not mandates.

Recommended Upper Limit (RUL) - Recommended maximum concentration of secondary contaminants. These reflect aesthetic qualities such as odor, taste or appearance. RULs are recommendations, not mandates.

Disinfection By-products - These compounds are by-products of the addition of chlorine or ozone employed in the disinfection of drinking water. These compounds are confirmed or suspected carcinogens for which *MCLs* have been set.

HAA5 - Haloacetic Acids are compounds created when Chlorine is added to water as a disinfectant. The *MCL* for HAA5's requires that one annual sample from an approved location does not exceed 60 *parts per billion*.

Monitoring Waiver - Permission from NJDEP or EPA to reduce or eliminate sampling for specific contaminants.

SPECIAL HEALTH CONCERNS

Special considerations regarding children, pregnant women, nursing mothers, and others:

Children may receive a slightly higher amount of a contaminant present in the water than do adults, on a body weight basis, because they may drink a greater amount of water per pound of body weight than do adults. For this reason, reproductive or developmental effects are used for calculating a drinking water standard if these effects occur at lower levels than other health effects of concern. If there is insufficient toxicity information for a chemical (for example, lack of data on reproductive or developmental effects), an extra uncertainty factor may be incorporated into the calculation of the drinking water standard, thus making the standard more stringent, to account for additional uncertainties regarding these effects. In the cases of lead and nitrate, effects on infants and children are the health endpoints upon which the standards are based.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. New Jersey Water Supply Authority - Manasquan Water Treatment Plant is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing 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. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Please note that the New Jersey Water Supply Authority is not responsible for lead testing within the customer communities. Consult the Consumer Confidence Report of your community water system for lead results.

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Cryptosporidium is usually removed through the filtration process and inactivated by other treatment processes such as ozonation. In order to check for the presence of Cryptosporidium, USEPA issued the Long Term 2 Enhanced Surface Water Treatment Rule in January 2006. As part of this rule, the Manasquan System

began monthly sampling and testing for *Cryptosporidium* in April 2008 and this testing continued through its completion in March 2010. The sample results did not show any presence of *Cryptosporidium*. All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. 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 activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater run-off, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater run-off and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can also, come from gas stations, urban stormwater run-off and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations (MCL's) which limit the amounts of certain contaminants in water provided by public water systems. Further information about EPA safe drinking water regulations can be obtained over the Internet at EPA's drinking water website, <http://www.epa.gov/safewater>. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

The New Jersey Department of Environmental Protection (NJDEP) has completed Source Water Assessment Reports and Summaries for all the public water systems in New Jersey. A summary of the report for NJWSA/Manasquan is included below. A complete copy of the Source Water Assessment Report with appendices and a four-page summary are available on-line at the NJWSA website: <http://www.njwsa.org/mwssipt.pdf>. Further information on the Source Water Assessment Program can be obtained by logging onto NJDEP's source water web site at <http://www.state.nj.us/dep/swap> or by contacting NJDEP's Bureau of Safe Drinking Water at 609-292-5550. You may also contact the Manasquan Water Supply System at 732-974-8383.

The New Jersey Department of Environmental Protection issues an individual Public Water System Identification Number (PWSID) to each water supply facility. The PWSID for the NJWSA/Manasquan Water Treatment Plant is 1352005. You can use this PWSID number to assist you in obtaining local drinking water quality information on the Internet at the USEPA website at <http://www.epa.gov/safewater/dwinfo/ni.htm> or at the NJDEP Bureau of Safe Drinking Water website at <http://www.state.nj.us/dep/watersupply/waterwatch/>

Interested individuals may participate in discussions of the operation of the Manasquan Water Supply System by attending the regular monthly meetings of the New Jersey Water Supply Authority or Southeast Monmouth Municipal Utilities Authority.

- New Jersey Water Supply Authority, first working Monday of each month at the NJWSA headquarters, 1851

Route 31, Clinton, NJ 08809. Call 1-908-638-6121 for details. Information on the New Jersey Water Supply Authority can also be obtained over the Internet at <http://www.niwsa.oni>.

- Southeast Monmouth Municipal Utilities Authority: first Thursday of each month in the Main Meeting Room, First Floor, Wall Township Municipal Complex, 2700 Allaire Road, Wall, NJ 07719. Call 1-732-449-8444 for specific meeting dates and times or e-mail phSOSuvjoptonline.net.

Borough of Spring Lake- PWSID # NJ1348001

Borough of Spring Lake is a public community water system consisting of 3 wells.

This system’s source water comes from the following aquifer: Englishtown Aquifer System

This system can purchase water from the following water systems: Belmar water Department, NJ Water Supply Authority, Spring Lake Heights Water Department

Susceptibility Ratings for Borough of Spring Lake Sources

The table below illustrates the susceptibility ratings for the seven contaminant categories (and radon) for each source in the system. The table provides the number of wells and intakes that rated high (H), medium (M), or low (L) for each contaminant category. For susceptibility ratings of purchased water, refer to the specific water system’s source water assessment report.

The seven contaminant categories are defined at the bottom of this page. DEP considered all surface water highly susceptible to pathogens, therefore all intakes received a high rating for the pathogen category. For the purpose of Source Water Assessment Program, radionuclides are more of a concern for ground water than surface water. As a result, surface water intakes’ susceptibility to radionuclides was not determined and they all received a low rating.

If a system is rated highly susceptible for a contaminant category, it does not mean a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, DEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radionuclides			Radon			Disinfection Byproduct Precursors		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Wells - 3			3			3			3			3		3			3			3			3	

Pathogens: Disease-causing organisms such as bacteria and viruses. Common sources are animal and human fecal wastes.

Nutrients: Compounds, minerals and elements that aid growth, that are both naturally occurring and man-made. Examples include nitrogen and phosphorus.

Volatile Organic Compounds: Man-made chemicals used as solvents, degreasers, and gasoline components. Examples include benzene, methyl tertiary butyl ether (MTBE), and vinyl chloride.

Pesticides: Man-made chemicals used to control pests, weeds and fungus. Common sources include land application and manufacturing centers of pesticides. Examples include herbicides such as atrazine, and insecticides such as chlordane.

Inorganics: Mineral-based compounds that are both naturally occurring and man-made. Examples include arsenic, asbestos, copper, lead, and nitrate.

Radionuclides: Radioactive substances that are both naturally occurring and man-made. Examples include radium and uranium.

Radon: Colorless, odorless, cancer-causing gas that occurs naturally in the environment. For more information go to <http://www.nj.gov/dep/rpp/radon/index.htm> or call (800) 648-0394.

Disinfection Byproduct Precursors: A common source is naturally occurring organic matter in surface water. Disinfection byproducts are formed when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

BOROUGH OF SPRING LAKE- FLOOD INFORMATION

The Borough of Spring Lake is participating with the Federal Insurance Agency in the "Community Rating System" which may result in the reduction of Federal flood insurance premiums for all Borough policyholders. We are required to notify all homeowners of this program and of the flooding potential in the Borough of Spring Lake.

Flood Hazards

The Federal Emergency Management Agency has classified some areas of the Borough of Spring Lake as a special flood hazard area, otherwise known as the 100-Year Flood Plain. As required by FEMA, flood maps have been developed for the Borough of Spring Lake. The maps show flood zones and the predicted elevations that a 100-year storm could reach or exceed.

Oceanfront properties are vulnerable to storm damage during severe northeasters and hurricane conditions. Flooding can come with little warning. Even though they appear to move slowly (three feet per second) a flood two feet deep can knock a man off his feet and float a car. Our dunes are considered important. They are our first line of defense against the onslaught of the incoming seas. Preserving those dunes is of the utmost importance. The Borough of Spring Lake maintains strict standards for dune restoration and preservation. Other properties that are susceptible border on the shores of Wreck Pond, Spring Lake and Lake Como. During the 1992 Northeaster certain streets at the southeast end of town experienced flooding over two feet, which did not completely dissipate for 48 hours.

Flood Insurance

Approximately fifteen percent of the Borough of Spring Lake homeowners carry Federal flood insurance. Keep in mind that the standard homeowner's insurance policy does not cover flood losses. In the regular Federal flood insurance programs, coverage of up to \$185,000 is available for single-family dwellings and up to \$250,000 for other residential dwellings. Up to \$60,000 contents coverage is available for the above. All homeowners are strongly urged to carry Federal flood insurance. Information on flood insurance may be obtained from your local insurance agent, or call the National Flood Insurance Program at 1-800-638-6620.

Flood Proofing

The best way to minimize storm damage to your home is to raise it on pilings so that the lowest habitable floor is at or above your base flood elevation. Current cost estimates for this varies from \$20,000 to \$25,000 and your flood insurance premiums could be significantly reduced. Another approach is to make your walls waterproof and place watertight closures over the doorways. This method is not recommended for houses with basements or if water will get over two feet deep. The inexpensive and easy task of installing flood vents in your home can also reduce storm damage. You may contact Albert Ratz, Jr., Construction Official at 732-449-0800.

Flood Services

The first thing you should do is check your flood hazard. The Spring Lake Library has publications dealing with flood-related topics, such as, flood proofing, elevated structures, flood maps, flood emergency and flood insurance. This information can be helpful if you are in a floodplain or have experienced a flood, drainage or sewer backup problem. You may call the Construction Official, Albert Ratz, Jr. if you have a question or need additional information.

What Can You Do?

Spring Lake depends on your cooperation and assistance. Please remember the Borough of Spring Lake has ordinances, which prohibit the disposal of litter upon any public or private property other than in a litter receptacle. It is also unlawful for a person to sweep into or deposit in any gutter, street, catch basin or other

public place any accumulation of litter from any public or private sidewalk or driveway.

Always check with the Building Department before you build on, alter, re-grade or fill on your property to ensure that projects do not cause problems on other properties and to ascertain whether a permit is needed for work.

Flood Warning

When severe storms are forecast for the Borough of Spring Lake, radio stations WADB (95.9 FM) and WJLK (1310 AM-94.3 FM) and Monmouth Cable TV will broadcast emergency information. The AM Alert Radio Station 1640 will operate 24 hours a day and continuously broadcast NOAA weather radio updates. If evacuation is required an Emergency Network message will be sent and emergency personnel will use the P.A. systems on all emergency vehicles to alert and instruct residents. The Borough of Spring Lake has an Emergency Management Plan, which is under the supervision of Police Chief Edward Kerr.

Flood Safety

If someone in your home would need to be evacuated by ambulance, please notify the Health Department in advance. In an emergency, contact the Police if the Health Department does not have you on file. Knowing how high your property is above mean sea level will give you an idea how vulnerable your property is to storm damage. Your FLOOD ELEVATION CERTIFICATE or property survey may have this information.

The Federal Insurance Administration suggests the following action when coastal storms or hurricanes are imminent:

1. **Turn off all electrical power at panel** - Some appliances such as television sets, keep electrical charges even after they have been unplugged. Don't use appliances or motors that have gotten wet unless they have been taken apart, cleaned and dried.
2. **Close main gas valve** - Be alert for gas leaks. Use a flashlight to inspect for damage. Don't smoke or use candles, lanterns, or open flames unless you know the gas has been turned off and the area has been ventilated.
3. **Move household items to the highest level you can** - Also cardboard boxes and newspapers, as these materials disintegrate and will clog drains and vents
4. **Keep a full tank of gas**
5. **Do not walk through flowing water** - Drowning is the number one cause of flood deaths, mostly during flash floods. Currents can be deceptive; six inches of moving water can knock you off your feet.
6. **Stay away from power lines and electrical wires** - The number two flood killer after drowning is electrocution. Electrical current can travel through water. Report downed power lines to power company.

If you evacuate your home, here are some essential items you should take: First Aid Supplies, Cell Phone, Prescription Medication, Supply of Non-Perishable Food, Batteries (Hearing aid, flashlight), Battery-operated Portable Radio, Blankets, Dry Clothing - Especially Shoes and Socks, Important Papers, Bank and Check Books, Valuable and Cherished Items, Games for Children and Adults.

The ASBURY PARK PRESS reported that eighty percent of those living on the coast had never experienced a hurricane. DO NOT BE COMPLACENT. Resolve to make your emergency plans now, and evacuate as soon as you are told.

Albert Ratz, Jr. is the Borough of Spring Lake's "Community Rating System" Coordinator. For further information on this subject, Mr. Ratz may be reached at 732-449-0800.