Annual Drinking Water Quality Report

Morris County Municipal Utilities Authority

PWS ID NJ1432001

For the Year 2016, Results from the Year 2015

The Morris County MUA is pleased to provide you with our Annual Drinking Water Quality Report for the year 2016. This report includes the water quality monitoring results from the Morris County MUA. These results are for you to incorporate into your Consumer Confidence Report (CCR) with the additional sampling results from your distribution system. We want to keep you informed about the excellent water quality and delivery services we have provided to you over the past year. Our goal is and always has been, to provide a safe and dependable supply of drinking water. Morris County MUA is exclusively a bulk water wholesaler. Our source is ground water, treated with sodium hypochlorite for disinfection and lime for pH adjustment.

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 the NJDEP, Bureau of Safe Drinking Water at 609-292-5550. For a brief summary of this report see page 3.

If you have any questions about this report contact Superintendent of Water Operations, Anthony Milonas at (973-584-5503). We want our valued customers to be informed about their water quality. If you want to learn more, feel free to attend any of our regularly scheduled meetings, call (973-285-8385) for date and time.

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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPAs Safe Drinking Water Hotline (1-877-927-6337).
The sources of drinking water (both tap 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-occuring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- ***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 stormwater runoff, and septic systems.
- ***Radioactive contaminants***, which can be naturally-occurring or be the result of oil and gas production and mining activities.
- ***Pesticides and herbicides***, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Morris County M.U.A. routinely monitors for contaminants in your drinking water according to federal and state laws. The following table shows the results of our monitoring for the period of January 1st to December 31st 2015. 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. Our system received monitoring waivers for asbestos and synthetic organic chemicals. State law also allows us to monitor for some contaminants less then once a year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

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. Morris County M.U.A. 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 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 at 1-877-927-6337 or at http:www.epa.gov/safewater/lead.

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.

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.
- ***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.
- ***Treatment Technique (TT)*** – A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- ***Action Level (AL)*** – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- ***Picocuries per liter (pCi/L)*** – picocuries per liter is a measure of the radioactivity in water.
- ***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.

Some people may be more vulnerable to contaminants in drinking water then the general population. Immuno-compromised persons such as persons with cancer who have undergone 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 microbial contaminants are available from the Safe Drinking Water Hotline (1-877-927-6337).

The Morris County M.U.A. participated in monitoring for unregulated contaminants with 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
Chlorate	Range = ND - 120	ppb	Agricultural defoliant of desiccant; disinfection byproduct; used in the production of chloride dioxide
Chromium	Range = ND – 1.2	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) (Hexavalent)	Range = 0.29 – 0.67	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 = 29 - 53	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
Vanadium	Range = ND – 1.4	ppb	Naturally-occurring element metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst

Morris County MUA Test Results

Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants:						
Arsenic Test results Yr. 2014	N	Range = ND – 0.5 Highest detect = 0.5	ppb	N/A	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium Test results Yr. 2014	N	Range = ND – 0.8 Highest detect = 0.8	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium Test results Yr. 2014	N	Range = ND – 1.4 Highest detect = 1.6	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride Test results Yr. 2014	N	Range = 0.06 – 0.2 Highest detect = 0.2	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen) Test results Yr. 2015	N	Range = 0.6 – 2.6 Highest detect = 2.6	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nickel Test results Yr. 2014	N	Range = ND – 1.9 Highest detect = 1.9	ppb	N/A	N/A	Erosion of natural deposits
Selenium Test results Yr. 2014	N	Range = ND – 0.9 Highest detect = 0.9	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Volatile Organic Contaminants / Disinfection Byproducts:						
HAA5s Haloacetic Acids Test results Yr. 2015	N	Range = ND – 3 Highest Locational Annual Average = 1	ppb	N/A	80	By-product of drinking water disinfection
Radioactive Contaminants:						
Gross Alpha Test results Yr. 2011	N	Range = ND – 3.6 Highest Avg. = 0.9	pCi/l	0	15	Erosion of natural deposits
Microbiological Contaminants:						
Total Colifotm Bacteria	N	1 Positive routine sample in September 2015		0	5% of monthly samples	Naturally present in the enviroment

Regulated Disinfectants:	Level Detected	MRDL	MRDLG
Chlorine (Sodium Hypochlorite) Test results Yr. 2015	Average = 0.6 ppm	4.0 ppm	4.0 ppm

Secondary Contaminant	Level Detected	Units of Measurement	RUL
Sodium Test results Yr. 2014	Range = 6 -63	ppm	50

HAA5 and TTHM compliance is based on the Locational Running Annual Average (LRAA) calculated at each monitoring location.

Sodium

We exceeded the Recommended Upper Limit (RUL) for sodium at one of our wells. For healthy individuals the sodium intake from water is not important, because a much greater intake of sodium takes place from salt in the diet. However sodium levels above the RUL may be of concern to individuals on a sodium restricted diet.

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. RUL's are recommendations, not mandates.

We had a positive routine Total Coliform Bacteria sample in September 2015. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other , potentially-harmful, bacteria may be present.

The following is a brief summary of our source water assessment performed by the NJDEP. Morris County M.U.A. is a public community water system consisting of 8 wells. This systems source water comes from the following aquifers: glacial sand and gravel, limestone. The table below illustrates the susceptibility ratings on the following potential contaminant sources that the NJDEP found with in the source water assessment areas. Each source has a susceptibility rating of high, medium, or low for each potential contaminant.

If a system is rated highly susceptible for a contamination 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.

Potential Contaminants	**Pathogens**			**Nutrients**			**Pesticides**			**Volatile Organic Compounds**			**Inorganics**			**Radionuclides**			**Radon**			**Disinfection Byproducts Precursors**		
Sources	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 - 8		8		4	2	2		2	6	2		6		1	7	1	6	1	2	6		5	3	
GUDI - 0																								
Surface water intakes -0																								

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.
Volatile Organic Compounds: Man made chemicals used as solvents, degreasers, and gasoline components.
Pesticides: Man made chemicals used to control pests, weeds and fungus. Common sources include land application and manufacturing centers of pesticides.
Inorganics: Mineral-based compounds that are naturally occurring and man made.
Radionuclides: Radioactive substances that are naturally occurring and man made.
Radon: Colorless, odorless, cancer causing gas that occurs naturally in the environment.
Disinfection Byproduct Precursors: A common source is naturally occurring organic matter in surface water. Disinfection by products are formed when the disinfectants (usually chlorine) is used to kill pathogens react with dissolved organic material present in water.

If you have any questions regarding the source water assessment report or summary please contact the Bureau of Safe Drinking Water at swap@dep.state.nj.us or call 609-292-5550

Thank you for allowing us to continue providing your municipality with clean, quality water this year.

Very truly yours,
Morris County Municipal Utilities Authority