

What the Numbers Mean to You: The table shows the results of our monitoring during 2008. We have learned through our testing that some contaminants have been detected, however, these contaminants were detected well below the levels set by the EPA to protect public health.

For a complete list of monitored contaminants, contact Middlesex Water Company at (732) 634-1500. As you can see, the Middlesex Water system had no MCL violations. The EPA has determined that your water is safe at these levels. The State requires water systems to monitor for certain contaminants less than once a year because the concentration of these contaminants is not expected to vary significantly from year to year. Therefore, some of these data may represent prior period testing that is considered representative of water quality. The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for some compounds because previous results have consistently been below the MCL. Middlesex Water Company received waivers for the following contaminants in both its surface and groundwater supplies: Synthetic Organic Chemicals and Nitrites.

ANNUAL WATER QUALITY RESULTS - 2008													
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Surface Water	Groundwater North Tingley Lane/ NJ American Water	Groundwater South Tingley Lane	Groundwater Park Ave./Maple Ave./ Spring Lake	Major Sources in Drinking Water		MCL Violation Yes/No			
Inorganic													
Arsenic (Note 1 & 3)	ppb	5	N/A	ND	ND	3	ND	Erosion of natural deposits		No			
Barium	ppm	2	2	0.02	ND	0.03	0.07	Discharge from metal refineries		No			
Lead (Note 2)	ppb	AL=15	0	1.0 No Samples over AL	1.0	1.0	1.0	Corrosion of household plumbing		No			
Copper (Note 2)	ppm	AL=1.3	1.3	0.323 No Samples over AL	0.323	0.323	0.323	Corrosion of household plumbing		No			
Nitrate	ppm	10	10	1.1	1.5	1.7	3.9	Erosion of natural deposits		No			
Microbiological													
Total Coliform Bacteria	MCL: Found in >5% of samples		0	1.0%	1.0%	1.0%	1.0%	Naturally present in the environment		No			
Fecal Coliform	N/A	N/A	0	ND	ND	ND	ND	Human and animal fecal waste		No			
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Used For Compliance	Highest Level Used For Range	Highest Level Used For Compliance	Highest Level Used For Range	Highest Level Used For Compliance	Highest Level Used For Range	Major Sources in Drinking Water		MCL Violation Yes/No	
Volatile Organic Chemicals													
Trichloroethylene (Notes 3 & 4)	ppb	1	0	ND	0.40	0.04-0.06	0.6	0.5-0.8	ND	Discharge from metal degreasing sites		No	
Turbidity													
	NTU's	TT (Note 5)	N/A	100%	0.03-0.48	0.07-0.43	N/A		N/A	Soil runoff		N/A	
Radiological (Note 6)													
Radium 226 & 228	pCi/l	5	0	ND	ND	ND	ND	Erosion of natural deposits		No			
Beta & Photon emitters (Note 7)	pCi/l	50	0	4.0	4.9-8	8.4	7.6	Decay of natural and man-made deposits		No			
Gross Alpha emitters (Note 8)	pCi/l	15	0	ND	5.7	4.5-6.9	9.3	Erosion of natural deposits		No			
Uranium (Note 9)	ppb	30	0	ND	8.5	7-10	15.5	Erosion of natural deposits		No			
Disinfection By-Products													
<i>Total Trihalomethanes</i> (Note 4)	ppb	80	N/A	39.0	16.1-85.7	39.0	ND-4.2	39.0	2.7-7.1	39.0	ND-17.6	By-product of drinking water chlorination	No
Chloroform	ppb	N/A	N/A		9.7-72.3		ND		ND-0.5		ND-0.5	By-product of drinking water chlorination	No
Bromodichloromethane	ppb	N/A	0		3.0-12.9		ND-0.3		ND-0.4		ND-1.5	By-product of drinking water chlorination	No
Dibromochloromethane	ppb	N/A	60		0.3-3.2		ND-0.9		0.4-1.7		ND-4.7	By-product of drinking water chlorination	No
Bromoform	ppb	N/A	0		ND-1.2		ND-3.4		2.3-5.4		ND-10.9	By-product of drinking water chlorination	No
<i>Total Haloacetic Acids</i> (Note 4)													
Monochloroacetic Acid	ppb	N/A	N/A	27.0	12.3-54.4	27.0	ND	27.0	ND	27.0	ND	By-product of drinking water chlorination	No
Dichloroacetic Acid	ppb	N/A	0		4.5-24.5		ND		ND		ND	By-product of drinking water chlorination	No
Trichloroacetic Acid	ppb	N/A	300		6.5-29.9		ND		ND		ND	By-product of drinking water chlorination	No
Bromoacetic Acid	ppb	N/A	N/A		ND		ND		ND		ND	By-product of drinking water chlorination	No
Dibromoacetic Acid	ppb	N/A	N/A		ND		ND		ND		ND	By-product of drinking water chlorination	No
Additional Monitoring													
Disinfectant Residuals (Note 9)	ppm	4ppm MRDL	4ppm MRDLG	0.66	ND-1.6	0.66	ND-1.1	0.66	ND-1.1	0.66	ND-1.1	Result of water disinfection	No
Additional contaminants for which we monitor that are currently not regulated by the EPA													
Perchlorate (Note 10)	ppb	CNR	N/A	–		0.8-4.0	ND	–		–		Oxygen additive in solid fuel propellant for rockets	N/A
PFOA (Note 11)	ppb	CNR	N/A	–		0.038	0.019	–		–		Discharge from Industrial Chemical Factories	N/A
PFOS (Note 11)	ppb	CNR	N/A	–		0.036	ND	–		–		Discharge from Industrial Chemical Factories	N/A
PFBA (Note 11)	ppb	CNR	N/A	–		0.18	ND	–		–		Discharge from Industrial Chemical Factories	N/A
Unregulated Contaminant Monitoring Rule (UCMR-2)													
During 2008, New Jersey American Water participated in the Unregulated Contaminant Monitoring Rule. 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. For testing conducted in the Raritan System, the following substance was found.													
Contaminant	Units	Range Detected		Use or Environmental Source									
N-nitrosopyrrolidine (NP-YR)	ppb	ND-0.0172		Nitrosamines can form as intermediates and by-products in chemical synthesesis and manufacture of rubber, leather, and palstics; can form spontaneously by reaction of precursor amines with mitrosating agents (nitrate and related compounds), or by action of nitrate-reducint bacteria. Foods such as bacon and malt beverages can contain nitrosamines; there is also evidence that they form in the upper GI tract.									

HEALTH INFORMATION – Health Effects of Detected Contaminants (Required Language)

Arsenic - Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Lead - Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Copper - Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Nitrate - Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Trichloroethylene - Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Turbidity - Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses and parasites, which can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

Total Coliform Bacteria - Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.

Fecal Coliform - Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

Radium 226 & 228 - Some people who drink water containing radium 226 or 228 in excess of the MCL over many years have an increased risk of getting cancer.

Definitions & Abbreviations used below:

Primary Standards: Standards which relate to public health.
MCLG: Maximum Contaminant Level Goal. 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.
MCL: Maximum Contaminant Level. 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.
MRDL: Maximum Residual Disinfectant Level. 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.
MRDLG: Maximum Residual Disinfectant Level Goal. 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.

Waiver: State permission to reduce monitoring frequency because previous results have consistently been below the MCL.
PPB: Parts Per Billion. 1 part per billion corresponds to 1 minute in 2000 years or 1 penny in \$10 million.
PPM: Parts Per Million. 1 part per million corresponds to 1 minute in 2 years or 1 penny in \$10 thousand.
mrem/year: Millirems per year. A measure of radiation absorbed by the body.
N/A: Not Applicable.
ND: None Detectable at testing limit.
NR: Not Reported.
<: Less Than.
AL: Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
CNR: Currently Not Regulated.
NTU: Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants.
pCi/l: Picocuries per Liter. A measure of the radioactivity in water.

Note 1: Middlesex Water Company is on reduced monitoring, once per three-year cycle. The listed Arsenic concentrations are from 2008.

Note 2: Middlesex Water Company is on reduced monitoring, once per three-year cycle. The listed Lead and Copper concentrations are the 90th Percentile Value from 2007. The highest level detected was 6 ppb for Lead and 0.491 ppm for Copper.

Note 3: MCLs for these chemicals were set by the NJDEP below those set by the EPA.

Note 4: Compliance is based on running annual average of quarterly sampling.

Note 5: TT (Treatment Technique) - A required process intended to reduce the level of a contaminant in drinking water. The TT does not apply to groundwater. Turbidity MCL - The Turbidity Level must be less than or equal to 0.3 ntu's in 95% of the samples taken every month and at no time exceed 1 ntu.

Note 6: North Tingley Lane/NJ American Water data is from 2005. The data for all other sites is from 2008.

Note 7: EPA considers 50 pCi/l to be the level of concern for Beta Particles.

Note 8: The Gross Alpha compliance is determined minus the Radon and Uranium contribution.

Note 9: MRDL and MRDLG are Maximum Disinfectant (Chlorine Residual) levels.

Note 10: North Tingley Lane/NJ American Water and South Tingley Lane were sampled in 2008. Spring Lake and Maple Avenue were not used in 2008, all others were previously ND.

Note 11 PFOA, PFOS and PFBA are a group of Perfluorinated compounds widely found in the environment. The health risk has not been determined but NJDEP has identified a guidance level of 0.040 ppb for PFOA ONLY.

What We Monitor

What Substances May Be Found in the Source Water Before It Is Treated?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water moves over land or through the ground, it dissolves naturally occurring minerals and organics and can pick up substances resulting from the presence of animal or human activity. Substances that may be present in source waters prior to the treatment process include:

Microbial Contaminants: Such as viruses and bacteria, which may come from sewage treatment plants, septic systems, livestock and wildlife.
Inorganic Contaminants: Such as salts and metals, which can be naturally occurring or result from storm water runoff, wastewater discharges, or farming.
Pesticides and Herbicides: Which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.

Organic Chemical Contaminants: Including natural, synthetic and volatile organic chemicals, which are by-products of nature and industrial processes and petroleum production and can also come from gas stations, storm water runoff and septic systems.

Radioactive Contaminants: Which can be naturally occurring or may be the result of oil and gas production and mining activities.

What We Do to Protect Your Water

About 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. Middlesex Water 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.

What the Numbers Mean to You: The table shows the results of our monitoring during 2009. We have learned through our testing that some contaminants have been detected, however, these contaminants were detected well below the levels set by the EPA to protect public health.

For a complete list of monitored contaminants, contact Middlesex Water Company at (732) 634-1500. As you can see, the Middlesex Water system had no MCL violations. The EPA has determined that your water is safe at these levels. The State requires water systems to monitor for certain contaminants less than once a year because the concentration of these contaminants is not expected to vary significantly from year to year. Therefore, some of these data may represent prior period testing that is considered representative of water quality. The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for some compounds because previous results have consistently been below the MCL. Middlesex Water Company received waivers for the following contaminants in both its surface and groundwater supplies: Synthetic Organic Chemicals and Nitrites.

ANNUAL WATER QUALITY RESULTS - 2009										
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Surface Water	Groundwater North Tingley Lane/ NJ American Water	Groundwater South Tingley Lane	Groundwater Park Ave./Maple Ave./ Spring Lake	Major Sources in Drinking Water		MCL Violation Yes/No
Inorganic										
Arsenic (Note 1 & 3)	ppb	5	N/A	ND	ND	3	ND	Erosion of natural deposits		No
Barium (Note 1)	ppm	2	2	0.022	ND	0.03	0.07	Discharge from metal refineries		No
Lead (Note 2)	ppb	AL=15	0	1.0 No Samples over AL	1.0	1.0	1.0	Corrosion of household plumbing		No
Copper (Note 2)	ppm	AL=1.3	1.3	0.323 No Samples over AL	0.323	0.323	0.323	Corrosion of household plumbing		No
Nitrate	ppm	10	10	0.6	1.5	1.3	3.7	Erosion of natural deposits		No
Microbiological										
Total Coliform Bacteria	MCL: Found in >5% of samples		0	1.0%	1.0%	1.0%	1.0%	Naturally present in the environment		No
Fecal Coliform	N/A	N/A	0	ND	ND	ND	ND	Human and animal fecal waste		No
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Used For Compliance	Highest Level Used For Range	Highest Level Used For Compliance	Highest Level Used For Range	Highest Level Used For Compliance	Highest Level Used For Range	MCL Violation Yes/No
Volatile Organic Chemicals										
Trichloroethylene (Notes 3 & 4)	ppb	1	0	ND	0.1	ND-0.27	0.44	0.27-0.57	ND	No
Turbidity										
Turbidity	NTU's	TT (Note 5)	N/A	100% 0.03-0.28		0.004-0.30		N/A	ND	N/A
Radiological (Note 6)										
Radium 226 & 228	pCi/l	5	0	ND	ND	ND	ND	Erosion of natural deposits		No
Beta & Photon emitters (Note 7)	pCi/l	50	0	4.9	4.9-8	8.4	7.6	Decay of natural and man-made deposits		No
Gross Alpha emitters (Note 8)	pCi/l	15	0	ND	5.7	4.5-6.9	9.3	Erosion of natural deposits		No
Uranium	ppb	30	0	ND	8.5	7-10	15.5	Erosion of natural deposits		No
Disinfection By-Products										
<i>Total Trihalomethanes</i> (Note 4)	ppb	80	N/A	35.0	10.3-106.9	35.0	ND-3.3	35.0	1.2-6.7	No
Chloroform	ppb	N/A	N/A		4.2-97.4		ND		ND	No
Bromodichloromethane	ppb	N/A	0		2.9-14.9		ND		ND-0.8	No
Dibromochloromethane	ppb	N/A	60		0.5-4.5		ND-1.1		0.3-1.3	No
Bromoform	ppb	N/A	0		ND-1.2		ND-2.2		0.9-2.6	No
<i>Total Haloacetic Acids</i> (Note 4)										
Monochloroacetic Acid	ppb	N/A	N/A	24.0	4.9-84.5	24.0	ND	24.0	ND	No
Dichloroacetic Acid	ppb	N/A	0		ND		ND		ND	No
Trichloroacetic Acid	ppb	N/A	300		2.9-48.2		ND		ND	No
Bromoacetic Acid	ppb	N/A	N/A		ND		ND		ND	No
Dibromoacetic Acid	ppb	N/A	N/A		ND		ND		ND	No
Additional Monitoring										
Disinfectant Residuals (Note 9)	ppm	4ppm MRDL	4ppm MRDLG	0.63	0.1-1.8	0.63	ND-1.7	0.63	ND-1.7	No
Additional contaminants for which we monitor that are currently not regulated by the EPA										
Perchlorate (Note 10)	ppb	CNR	N/A	–		3.1-4.7		ND	1.50	N/A
PFOA (Note 11)	ppb	CNR	N/A	–		0.038		0.019	–	N/A
PFOS (Note 11)	ppb	CNR	N/A	–		0.036		ND	–	N/A
PFBA (Note 11)	ppb	CNR	N/A	–		0.018		ND	–	N/A

NJ AMERICAN - Raritan System PWSID NJ2004002 - 2009

Unregulated Contaminant Monitoring Rule (UCMR-2)			
During 2009 , New Jersey American Water participated in the Unregulated Contaminant Monitoring Rule. 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. For testing conducted in the Raritan System, the following substance was found.			
Contaminant	Units	Range Detected	Use or Environmental Source
N-nirtosopyrrolidine (NPYR)	ppb	ND to 0.0033	Nirtosamines can form as intermediates and byproducts in chemical synthesis and manufacture of rubber, leather, and plastics; can form spontaneously by reaction of precursor amines with nitrosamine agents (nitrate and related compounds), or by action of nitrate-reducing bacteria. Foods such as bacon and malt beverages can contain nitrosamines; there is also evidence that they form in the upper GI tract.

HEALTH INFORMATION – Health Effects of Detected Contaminants (Required Language)

Arsenic - Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Barium – Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

Lead - Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slicht deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Copper - Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Nitrate - Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Trichloroethylene - Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Definitions & Abbreviations used below:

Primary Standards: Standards which relate to public health.
MCLG: Maximum Contaminant Level Goal. 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.
MCL: Maximum Contaminant Level. 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.
MRDL: Maximum Residual Disinfectant Level. 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.
MRDLG: Maximum Residual Disinfectant Level Goal. 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.

Waiver: State permission to reduce monitoring frequency because previous results have consistently been below the MCL.
ppb: Parts Per Billion. 1 part per billion corresponds to 1 minute in 2000 years or 1 penny in \$10 million.
ppm: Parts Per Million. 1 part per million corresponds to 1 minute in 2 years or 1 penny in \$10 thousand.
mrem/year: Millirems per year. A measure of radiation absorbed by the body.
N/A: Not Applicable.
ND: None Detectable at testing limit.
NR: Not Reported.
<: Less Than.
AL: Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
CNR: Currently Not Regulated.
NTU: Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants.
pCi/l: Picocuries per Liter. A measure of the radioactivity in water.

Note 1: Middlesex Water Company is on reduced monitoring, once per three-year cycle. The listed Arsenic concentrations are from 2008 for all groundwater Points of Entry.

Note 2: Middlesex Water Company is on reduced monitoring, once per three-year cycle. The listed Lead and Copper concentrations are the 90th Percentile Value from 2007. The highest level detected was 6 ppb for Lead and 0.491 ppm for Copper.

Note 3: MCLs for these chemicals were set by the NJDEP below those set by the EPA.

Note 4: Compliance is based on running annual average of quarterly sampling.

Note 5: TT (Treatment Technique) - A required process intended to reduce the level of a contaminant in drinking water. The TT does not apply to groundwater. Turbidity MCL - The Turbidity Level must be less than or equal to 0.3 ntu's in 95% of the samples taken every month and at no time exceed 1 ntu.

Note 6: North Tingley Lane/NJ American Water data is from 2005. The data for all other sites is from 2008.

Note 7: EPA considers 50 pCi/l to be the level of concern for Beta Particles.

Note 8: The Gross Alpha compliance is determined minus the Radon and Uranium contribution.

Note 9: MRDL and MRDLG are Maximum Disinfectant (Chlorine Residual) levels.

Note 10: North Tingley Lane/NJ American Water and Park Avenue were sampled in 2009, South Tingley Lane was sampled in 2008.

Note 11: PFOA (Perfluorooctanoic Acid), PFOS (Perfluorooctanesulfonic) and PFBA (Perfluorobutanoate) are a group of Perfluorinated compounds widely found in the environment. The health risk has not been determined but NJDEP has identified a guidance level of 0.040 ppb for PFOA ONLY.

What Substances May Be Found in the Source Water Before It Is Treated?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water moves over land or through the ground, it dissolves naturally occurring minerals and organics and can pick up substances resulting from the presence of animal or human activity. Substances that may be present in source waters prior to the treatment process include:

Microbial Contaminants: Such as viruses and bacteria, which may come from sewage treatment plants, septic systems, live-stock and wildlife.

Inorganic Contaminants: Such as salts and metals, which can be naturally occurring or result from storm water runoff, wastewater discharges, or farming.

Pesticides and Herbicides: Which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.

Organic Chemical Contaminants: Including natural, synthetic and volatile organic chemicals, which are by-products of nature and industrial processes and petroleum production and can also come from gas stations, storm water runoff and septic systems.

Radioactive Contaminants: Which can be naturally occurring or may be the result of oil and gas production and mining activities.

About 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. Middlesex Water 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.

Ensuring Water Quality

To ensure that tap water is safe to drink, the EPA and the DEP Bureau of Safe Drinking Water prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. 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 **EPA Safe Drinking Water Hotline at (800) 426-4791**.

What the Numbers Mean to You: The table shows the results of our monitoring during 2010. We have learned through our testing that some contaminants have been detected, however, these contaminants were detected well below the levels set by the EPA to protect public health.

For a complete list of monitored contaminants, contact Middlesex Water Company at (732) 634-1500. As you can see, the Middlesex Water system had no MCL violations. The EPA has determined that your water is safe at these levels. The State requires water systems to monitor for certain contaminants less than once a year because the concentration of these contaminants is not expected to vary significantly from year to year. Therefore, some of these data may represent prior period testing that is considered representative of water quality. The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for some compounds because previous results have consistently been below the MCL. Middlesex Water Company received waivers for the following contaminants in both its surface and groundwater supplies: Synthetic Organic Chemicals and Nitrites.

ANNUAL WATER QUALITY RESULTS - 2010													
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Surface Water		Groundwater North Tingley Lane/ NJ American Water		Groundwater South Tingley Lane		Groundwater Park Ave./Maple Ave./ Spring Lake		Major Sources in Drinking Water	MCL Violation Yes/No
				Compliance	Range	Compliance	Range	Compliance	Range	Compliance	Range		
Inorganic													
Arsenic (Note 1 & 3)	ppb	5	N/A		ND		ND		3		ND	Erosion of natural deposits; Runoff from Orchards; Runoff from glass and electronics production wastes.	No
Barium (Note 1)	ppm	2	2		0.028		ND		0.03		0.07	Discharge of drilling wastes; Discharge from metal refineries; Erosion of Natural deposits.	No
Lead (Note 2)	ppb	AL=15	0		3.2 (1 sample > AL)		3.2 (1 sample > AL)		3.2 (1 sample > AL)		3.2 (1 sample > AL)	Corrosion of household plumbing systems; Erosion of natural deposits.	No
Copper (Note 2)	ppm	AL=1.3	1.3		0.303		0.303		0.303		0.303	Corrosion of household plumbing systems; Erosion of natural deposits.	No
Nitrate	ppm	10	10		1.0		1.6		1.3		3.9	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits	No
Microbiological													
Total Coliform Bacteria	MCL: 5% of monthly samples		0		1.7%		1.7%		1.7%		1.7%	Naturally present in the environment	No
Fecal Coliform	N/A		0		ND		ND		1 (Note A)		ND	Human and animal fecal waste	No
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Used For		Highest Level Used For		Highest Level Used For		Highest Level Used For		Major Sources in Drinking Water	MCL Violation Yes/No
				Compliance	Range	Compliance	Range	Compliance	Range	Compliance	Range		
Volatile Organic Chemicals													
Trichloroethylene (Notes 3 & 4)	ppb	1	0		ND		0.4		ND		ND	Discharge from metal degreasing sites	No
Turbidity	NTU's	TT (Note 5)	N/A	100%	0.02-0.039		99%		(Note B)		N/A	Soil runoff and other factories	N/A
Radiological (Note 6)													
Radium 226 & 228	pCi/l	5	0		ND		0.7		ND		ND	Erosion of natural deposits	No
Beta & Photon emitters (Note 7)	pCi/l	50	0		4.9		ND		8.4		7.6	Decay of natural and man-made deposits	No
Gross Alpha emitters (Note 8)	pCi/l	15	0		ND		0.4		9.3		1.4	Erosion of natural deposits	No
Uranium	ppb	30	0		ND		ND		15.5		2.0	Erosion of natural deposits	No
Disinfection By-Products													
<i>Total Trihalomethanes</i> (Note 4)	ppb	80	N/A	38.0	16.6-100.1	38.0	ND-14.8	38.0	ND-14.8	38.0	ND-14.8	By-product of drinking water disinfection	No
<i>Total Haloacetic Acids</i> (Note 4)	ppb	60	N/A	30.0	24.0-65.9	30.0	ND-7.6	30.0	ND-7.6	30.0	ND-7.6	By-product of drinking water disinfection	No
Disinfectant Residuals (Note 9)	ppm	4ppm MRDL	4ppm MRDLG	0.89	ND-1.6	0.89	ND-1.8	0.89	ND-1.8	0.89	ND-1.8	Water additive used to control microbes	No
Additional Monitoring													
Additional contaminants for which we monitor that are currently not regulated by the EPA													
Perchlorate (Note 10)	ppb	CNR	N/A	–	–	–	3.1-4.7	–	–	–	1.50	Oxygen additive in solid fuel propellant for rockets	N/A
PFOA (Note 11)	ppb	CNR	N/A	–	–	–	0.038	–	–	–	0.019	Discharge from Industrial Chemical Factories	N/A
PFOS (Note 11)	ppb	CNR	N/A	–	–	–	0.036	–	–	–	–	Discharge from Industrial Chemical Factories	N/A
PFBA (Note 11)	ppb	CNR	N/A	–	–	–	0.018	–	–	–	–	Discharge from Industrial Chemical Factories	N/A

NJ AMERICAN - Raritan System PWSID NJ2004002 - 2010

Unregulated Contaminant Monitoring Rule (UCMR-2)			
During 2010 , New Jersey American Water participated in the Unregulated Contaminant Monitoring Rule. 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. For testing conducted in the Raritan System, the following substance was found.			
Contaminant	Units	Range Detected	Use or Environmental Source
N-nirtosopyrrolidine (NPYR)	ppb	ND to 0.0033	Nirtosamines can form as intermediates and byproducts in chemical synthesis and manufacture of rubber, leather, and plastics; can form spontaneously by reaction of precursor amines with nitrosamine agents (nitrate and related compounds), or by action of nitrate-reducing bacteria. Foods such as bacon and malt beverages can contain nitrosamines; there is also evidence that they form in the upper GI tract.

HEALTH INFORMATION – Health Effects of Detected Contaminants (Required Language)

Arsenic - Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Barium – Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

Lead - Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Copper - Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson’s Disease should consult their personal doctor.

Nitrate - Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Trichloroethylene - Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Turbidity - Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include

Special Notes:

Extensive rains and flooding on March 14, 2010 resulted in untreated water entering the treated water supply. The public was immediately notified of the situation and required to boil their water as a precaution. All testing showed no contamination and therefore no health risk. Measures have been taken to prevent recurrence.

A. A raw water sample taken on July 9, 2010 from one of our wells was positive for E. coli. The sample was triggered, according to the new Ground Water Rule, when a positive bacteria sample was found during routine sampling of the water distribution system. The well was immediately shut down and the public notified. Subsequent testing of the well indicated no bacterial contamination. The well has been off line while Middlesex Water investigates possible treatment options.

B. On September 23, 2010 New Jersey American Water notified us that they incurred a treatment technique violation for turbidity. Since we purchase water from them we were obligated to provide you with notification and complied with that requirement. However, at no time did this represent a health risk or MCL violation for our system.

Definitions & Abbreviations used below:

Primary Standards: Standards which relate to public health.
MCLG: Maximum Contaminant Level Goal. 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.
MCL: Maximum Contaminant Level. 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.
MRDL: Maximum Residual Disinfectant Level. 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.
MRDLG: Maximum Residual Disinfectant Level Goal. 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.

Waiver: State permission to reduce monitoring frequency because previous results have consistently been below the MCL.
ppb: Parts Per Billion. 1 part per billion corresponds to 1 minute in 2000 years or 1 penny in \$10 million.
ppm: Parts Per Million. 1 part per million corresponds to 1 minute in 2 years or 1 penny in \$10 thousand.
mrem/year: Millirems per year. A measure of radiation absorbed by the body.
N/A: Not Applicable.
ND: None Detectable at testing limit.
NR: Not Reported.
<: Less Than.
AL: Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
CNR: Currently Not Regulated.
NTU: Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants.
pCi/l: Picocuries per Liter. A measure of the radioactivity in water.

Note 1: Middlesex Water Company is on reduced monitoring, once per three-year cycle. The listed Arsenic concentrations are from 2008 for all groundwater Points of Entry.

Note 2: Middlesex Water Company is on reduced monitoring, once per three-year cycle. The listed Lead and Copper concentrations are the 90th Percentile Value taken in 2010. The highest level detected was 48.

Note 3: MCLs for these chemicals were set by the NJDEP below those set by the EPA.

Note 4: Total Trihalomethanes and Total Haloacetic Acid values used for compliance are running Annual Averages of quarterly sampling for the entire system. Ranges will vary depending on source water.

Note 5: TT (Treatment Technique) - A required process intended to reduce the level of a contaminant in drinking water. The TT does not apply to groundwater.

Turbidity MCL - The Turbidity Level must be less than or equal to 0.3 ntu’s in 95% of the samples taken every month and at no time exceed 1 ntu.

Note 6: Results for North Tingley Lane/NJ American Water is from NJ American, North Tingley Lane will be sampled in 2011.

The data for all other sites is from 2008.

Note 7: EPA considers 50 pCi/l to be the level of concern for Beta Particles.

Note 8: The Gross Alpha compliance is determined minus the Radon and Uranium contribution.

Note 9: MRDL and MRDLG are Maximum Disinfectant (Chlorine Residual) levels.

Note 10: North Tingley Lane/NJ American Water and Park Avenue were sampled in 2009, South Tingley Lane was sampled in 2008.

Note 11: PFOA (Perfluorooctanoic Acid), PFOS (Perfluorooctanesulfonic) and PFBA (Perfluorobutanoate) are a group of Perfluorinated compounds widely found in the environment. The health risk has not been determined but NJDEP has identified a guidance level of 0.040 ppb for PFOA ONLY.

What Substances May Be Found in the Source Water Before It Is Treated?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water moves over land or through the ground, it dissolves naturally occurring minerals and organics and can pick up substances resulting from the presence of animal or human activity.

Substances that may be present in source waters prior to the treatment process include:

Microbial Contaminants: Such as viruses and bacteria, which may come from sewage treatment plants, septic systems, livestock and wildlife.

Inorganic Contaminants: Such as salts and metals, which can be naturally occurring or result from storm water runoff, wastewater discharges, or farming.

Pesticides and Herbicides: Which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.

Organic Chemical Contaminants: Including natural, synthetic and volatile organic chemicals, which are by-products of nature and industrial processes and petroleum production and can also come from gas stations, storm water runoff and septic systems.

Radioactive Contaminants: Which can be naturally occurring or may be the result of oil and gas production and mining activities.

About 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. Middlesex Water 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/safe-water/lead.

Ensuring Water Quality

To ensure that tap water is safe to drink, the EPA and the DEP Bureau of Safe Drinking Water prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. 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 **EPA Safe Drinking Water Hotline at (800) 426-4791**.

ANNUAL WATER QUALITY RESULTS - 2011

Primary Standards

Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Results		MCL Violation Yes/No	Major Sources in Drinking Water
				Highest Level used for Compliance	Range		
INORGANIC							
Arsenic (Note 1)	ppb	5	N/A	1.1	ND - 1.1	No	Erosion of natural deposits; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.20	0.06 - 0.20	No	Discharge from metal refineries; Erosion of natural deposits.
Selenium	ppb	50	50	0.8	ND - 0.8	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Nickel (Note 2)	ppb	N/A	N/A	1.3	0.7 - 1.3	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Fluoride	ppm	4	4	0.06	N/A	No	Erosion of natural deposits
Lead (Note 3)	ppb	AL=15	0	3.2	1 sample > AL	No	Corrosion of household plumbing systems
Copper (Note 3)	ppm	AL=1.3	1.3	0.3	N/A	No	Corrosion of household plumbing systems
Nitrate	ppm	10	10	4.1	0.7 - 4.1	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
MICROBIOLOGICAL							
Total Coliform Bacteria		>5% of monthly samples	0	1.8%	N/A	No	Naturally present in the environment
Turbidity	NTU's	TT = 1 NTU	0	0.30	N/A	No	Soil runoff
		TT= 95% of samples <0.3 NTU		99%	N/A		
Disinfectant Residuals (Chlorine/Chloramines)	ppm	>4 (MRDL)	>4 (MRDLG)	0.8	0.1 - 1.6	No	Water additive used to control microbes
DISINFECTION BY-PRODUCTS							
Total Trihalomethanes (Note 4)	ppb	80	N/A	45.0	2.2 - 112.9	No	By-product of drinking water disinfection
Total Haloacetic Acids (Note 4)	ppb	60	N/A	28.6	ND - 74.0	No	By-product of drinking water disinfection
RADIOLOGICAL							
Beta & Photon emitters (Note 5)	pCi/l	50	0	3.6	1.7 - 3.6	No	Decay of natural and man-made deposits
Alpha emitters (Note 6)	pCi/l	15	0	3.8	3.5 - 3.8	No	Erosion of natural deposits
Uranium	ppb	30	0	2	ND - 2	No	Erosion of natural deposits
Additional Monitoring	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Detected	Range	MCL Violation Yes/No	Major Sources in Drinking Water
Additional contaminants for which we monitor that are currently not regulated by the EPA							
PFOA (Note 7)	ppt	CNR	N/A	9.3	ND - 18.0	N/A	Discharge from Industrial Chemical Factories
PFHA (Note 7)	ppt	CNR	N/A	3.1	ND - 3.1	N/A	Discharge from Industrial Chemical Factories
Hexavalent Chromium (Note 8)	ppt	CNR	N/A	130	80 - 130	N/A	Discharge from Steel and Pulp Mills, and erosion of natural deposits of Chromium.

Definitions & Abbreviations used below:

Primary Standards: Standards which relate to public health. **MCLG:** Maximum Contaminant Level Goal. 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. **MCL:** Maximum Contaminant Level. 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. **MRDL:** Maximum Residual Disinfectant Level. 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. **MRDLG:** Maximum Residual Disinfectant Level Goal. 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. **Waiver:** State permission to reduce monitoring frequency because previous results have consistently been below the MCL.

ppt: Parts Per Trillion. 1 ppt corresponds to 1 penny in \$10 billion. **ppb:** Parts Per Billion. 1 ppb corresponds to 1 penny in \$10 million. **ppm:** Parts Per Million. 1 ppm corresponds to 1 penny in \$10 thousand. **mrem/year:** Millirems per year. A measure of radiation absorbed by the body. **N/A:** Not Applicable. **ND:** None Detectable at testing limit. **NR:** Not Reported. **<:** Less Than. **>:** Greater Than. **AL:** Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **CNR:** Currently Not Regulated. **NTU:** Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants. **pCi/l:** Picocuries per Liter. A measure of the radioactivity in water. **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water. **Turbidity MCL:** The Turbidity Level must be less than or equal to 0.3 NTU's in 95% of the samples taken every month and at no time exceed 1 NTU.

What Substances May be Found in the Source Water Before it is Treated?

The sources of drinking water (both tap water and bottled water) generally include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water moves over land or through the ground, it dissolves naturally occurring minerals and organics and can pick up substances resulting from the presence of animal or human activity. Substances that may be present in source waters prior to the treatment process include:

Microbial Contaminants: Such as viruses and bacteria, which may come from sewage treatment plants, septic systems, livestock and wildlife.

Inorganic Contaminants: Such as salts and metals, which can be naturally occurring or result from storm water runoff, wastewater discharges, or farming.

Pesticides and Herbicides: Which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.

Organic Chemical Contaminants: Including natural, synthetic and volatile organic chemicals, which are by-products of nature and industrial processes and petroleum production and can also come from gas stations, storm water runoff and septic systems.

Radioactive Contaminants: Which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

ANNUAL WATER QUALITY RESULTS - 2012

Primary Standards

Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Results		MCL Violation Yes/No	Major Sources in Drinking Water
				Highest Level used for Compliance	Range		
INORGANIC							
Arsenic (Note 1)	ppb	5	N/A	4.1	ND - 4.1	No	Erosion of natural deposits; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.32	0.25 - 0.32	No	Discharge from metal refineries; Erosion of natural deposits.
Selenium	ppb	50	50	2.4	ND - 2.4	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Nickel (Note2)	ppb	N/A	N/A	1.8	1.27 - 1.8	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Fluoride	ppm	4	4	0.14	0.08 - 1.8	No	Erosion of natural deposits
Lead (Note 3)	ppb	AL=15	0	3.2	1 sample > AL	No	Corrosion of household plumbing systems
Copper (Note 3)	ppm	AL=1.3	1.3	0.3	N/A	No	Corrosion of household plumbing systems
Nitrate	ppm	10	10	3.7	0.9 - 3.7	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
MICROBIOLOGICAL							
Total Coliform Bacteria		>5% of monthly samples	0	0.6%	N/A	No	Naturally present in the environment
Turbidity	NTU's	TT = 1 NTU	0	0.30	N/A	No	Soil runoff
		TT= 95% of samples <0.3 NTU		99%	N/A		
Disinfectant Residuals (Chlorine/Chloramines)	ppm	>4 (MRDL)	>4 (MRDLG)	0.7	ND - 1.5	No	Water additive used to control microbes
DISINFECTION BY-PRODUCTS (Note 4)							
Total Trihalomethanes (Stage 1)	ppb	80	N/A	40	3.5-38	No	By-product of drinking water disinfection
Total Trihalomethanes (Stage 2)	ppb	80	N/A	N/A	5.7-60.5	No	By-product of drinking water disinfection
Total Haloacetic Acids (Stage 1)	ppb	60	N/A	30	1.6-37	No	By-product of drinking water disinfection
Total Haloacetic Acids (Stage 2)	ppb	60	N/A	N/A	1.5-59	No	By-product of drinking water disinfection
Bromate	ppb	10	0	3	ND - 3	No	By-product of drinking water disinfection
SYNTHETIC ORGANIC COMPOUNDS							
Atrazine	ppb	3	3	0.2	N/A	No	Runoff from herbicide used on row crops
RADIOLOGICAL							
Beta & Photon emitters (Note 5)	pCi/l	50	0	3.6	1.7 - 3.6	No	Decay of natural and man-made deposits
Alpha emitters (Note 6)	pCi/l	15	0	2.2	1.4 - 2.2	No	Erosion of natural deposits
Uranium	ppb	30	0	15	3.8 - 15	No	Erosion of natural deposits
Additional Monitoring	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Detected	Range	MCL Violation Yes/No	Major Souces in Drinking Water
Additional contaminants for which we monitor that are currently not regulated by the EPA							
PFOA (Note 7)	ppt	CNR	N/A	26.0	4.0 - 26.0	N/A	Discharge from Industrial Chemical Factories
PFHA (Note 7)	ppt	CNR	N/A	5.9	ND - 5.9	N/A	Discharge from Industrial Chemical Factories
Hexavalent Chromium (Note 8)	ppt	CNR	N/A	130	80 - 130	N/A	Discharge from Steel and Pulp Mills, and erosion of natural deposits of Chromium.
N-nitrosopyrrolidine (NPYR)	ppt	CNR	N/A	3.3	ND - 3.3	N/A	Reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria.

Note 1: MCLs for these chemicals were set by the NJDEP below those set by the EPA.

Note 2: There is no MCL for Nickel but it must be monitored.

Note 3: Middlesex Water Company is on reduced monitoring, once per three-year cycle. The listed Lead and Copper concentrations are the 90th Percentile Value taken in 2010. Next sample due in 2013.

Note 4: The regulation for Total Trihalomethanes and Total Haloacetic Acid changed in mid-2012 from Stage 1 to Stage 2. Compliance is now based on Local Running Annual Averages of quarterly samples, individual sites rather than averages of all sites. Four quarters of sampling are required before compliance is determined. Only 3 quarters have been taken.

Note 5: The MCL for Beta Particles is 4 mrem/yr. EPA considers 50 pCi/l to be the level of concern for Beta Particles.

Note 6: The Gross Alpha compliance is determined minus the Radon and Uranium contribution.

Note 7: PFOA (Perfluorooctanoic Acid) and PFHA (Perfluorohexanoic Acid) are a group of Perfluorinated compounds widely found in the environment. The health risk has not been determined but NJDEP has identified a guidance level of 40 ppt for PFOA ONLY.

Note 8: Sampled in 2011. Analysis for this chemical was voluntarily performed based on recommendations from the USEPA. For more information on Hexavalent Chromium (Chromium 6), visit the EPA website at <http://water.epa.gov/drink/contaminants/basicinformation/chromium.cfm>

Secondary Standards (Non-Health Related)

Parameter	Units	RUL*	Results	
			Average	Range
Sodium	ppm	50	27	24.6 - 32
Alkalinity	ppm	N/A	109	34 - 284
Chloride	ppm	250	53	34 - 154
Hardness (as CaCO3)	ppm	250	199	40 - 796
Sulfate	ppm	250	228	12 - 459.5
Color	Color Units	10	2	2 - 7
pH	N/A	6.5 - 8.5 (optimum range)	7.7	6.7 - 8.2
Odor	Threshold Odor Number	3	3.2	2.4 - 3.6
Total Dissolved Solids	ppm	500	555	117 - 1092.5
Zinc	ppm	5	0.4	0.341 - 0.5

*RUL: Recommended Upper Limit

What the Numbers Mean to You

The table shows the results of monitoring during 2012. The EPA requires monitoring of over 100 drinking water contaminants. Those listed are the only contaminants detected. For a complete list of monitored contaminants, contact Middlesex Water Company at (732) 634-1500. As you can see, the Middlesex Water system had no MCL violations. The EPA has determined that your water is safe at these levels. The State requires water systems to monitor for certain contaminants less than once a year because the concentration of these contaminants is not expected to vary significantly from year to year. Therefore, some of these data may represent prior period testing that is considered representative of water quality.

HEALTH INFORMATION

Health Effects of Detected Contaminants (Required Language)

Arsenic – Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Special Note

Due to the devastation caused by Superstorm Sandy, power was out for an extended period. Backup generators that were put into service eventually failed due to excessive runtime. The pressure in the distribution system went below 20 PSI where water quality could not be guaranteed. A Boil Water Order was put into effect to protect public health. Power was restored shortly thereafter and all bacterial analysis was negative before the Boil Water Order was lifted.

Required Additional Health Information

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, this 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.

A Word of Caution

Our treatment systems are designed and operated to produce water that meets all state and federal standards. Many substances and microscopic organisms found in water may be a concern if they occur at high concentrations. For some contaminants, MCL levels have not been set because the EPA has not determined at what level they pose a public health risk. This is often because a reliable detection method is unavailable and/or because the contaminant is rarely found in treated water.

Some naturally occurring organisms commonly found in the natural water supplies may not be eliminated during the treatment process. This means that even a well-run system may contain low levels of microscopic organisms. The levels, however, are normally of little concern to healthy individuals. It should be noted, however, that under certain circumstances, these organisms might amplify to dangerous levels within a customer's own water supply system. All customers, including residential, commercial and industrial customers, and other large facilities such as schools, hospitals and hotels/motels, should follow appropriate procedures for maintaining their own internal plumbing systems and appliances. If you have any concerns about these matters, please call the EPA Safe Drinking Water Hotline at 1-800-426-4791.

For Your Safety – A Message for People with Compromised Immune Systems

Although our drinking water meets all state and federal regulations, some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised individuals 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 individuals 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 pathogens are available from the EPA Safe Drinking Water Hotline at 1-800-426-4791.

ANNUAL WATER QUALITY RESULTS - 2013

Primary Standards

Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Results		MCL Violation Yes/No	Major Sources in Drinking Water
				Highest Level used for Compliance	Range		
INORGANIC							
Arsenic	ppb	5	N/A	4.1	ND - 4.1	No	Erosion of natural deposits; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.30	0.25 - 0.32	No	Discharge from metal refineries; Erosion of natural deposits.
Selenium	ppb	50	50	2.4	ND - 2.4	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Nickel (Note 1)	ppb	N/A	N/A	1.8	1.2 - 1.8	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Fluoride	ppm	4	4	0.14	0.07 - 1.8	No	Erosion of natural deposits
Lead (Note 2)	ppb	AL=15	0	2.8	1 sample > AL	No	Corrosion of household plumbing systems
Copper (Note 2)	ppm	AL=1.3	1.3	0.3	N/A	No	Corrosion of household plumbing systems
Nitrate	ppm	10	10	3.8	0.3 - 3.8	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
MICROBIOLOGICAL							
Total Coliform Bacteria		>5% of monthly samples	0	0.6%	N/A	No	Naturally present in the environment
Turbidity	NTU's	TT = 1 NTU	0	0.23	N/A	No	Soil runoff
		TT= 95% of samples <0.3 NTU		100%	N/A		
Disinfectant Residuals (Chlorine/Chloramines)	ppm	>4 (MRDL)	>4 (MRDLG)	0.7	ND - 1.5	No	Water additive used to control microbes
DISINFECTION BY-PRODUCTS (NOTE 4)							
Total Trihalomethanes (Stage 2)	ppb	80	N/A	62	17 - 97	No	By-product of drinking water disinfection
Total Haloacetic Acids (Stage 2)	ppb	60	N/A	41	12-64	No	By-product of drinking water disinfection
SYNTHETIC ORGANIC COMPOUNDS							
Atrazine	ppb	3	3	0.2	N/A	No	Runoff from herbicide used on row crops
RADIOLOGICAL							
Beta & Photon emitters (Note 5)	pCi/l	50	0	3.6	1.7 - 3.6	No	Decay of natural and man-made deposits
Alpha emitters (Note 6)	pCi/l	15	0	3.8	1.4 - 3.8	No	Erosion of natural deposits
Uranium	ppb	30	0	15	<1 - 15	No	Erosion of natural deposits
Additional Monitoring	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Detected	Range	MCL Violation Yes/No	Major Sources in Drinking Water
Additional contaminants for which we monitor that are currently not regulated by the EPA							
PFOA (Note 7)	ppb	CNR	N/A	0.007	0.003 - 0.007	N/A	Discharge from Industrial Chemical Factories
PFHA (Note 7)	ppb	CNR	N/A	0.003	ND - 0.003	N/A	Discharge from Industrial Chemical Factories
Chromium-6 (Note 8)	ppb	CNR	N/A	0.58	0.078 - 0.058	N/A	Discharge from Steel and Pulp Mills, and erosion of natural deposits of Chromium.
N-nitrosopyrrolidine (NPYR) (Note 9)	ppt	CNR	N/A	3.3	ND - 3.3	N/A	Reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria.
UCMR3 (Unregulated Contaminant Monitoring Rule) (Note 10)							
1,4 dioxane	ppb	CNR	N/A	0.3	ND - 0.3	N/A	Solvent or solvent stabilizer in manufacture of paper, cotton, textile products, auto coolant, cosmetics and shampoos.
Chromium (total)	ppb	100	100	0.5	ND - 0.5	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Molybdenum	ppb	CNR	N/A	20	1 - 20	N/A	Naturally occurring element found in ores and present in plant, animals and bacteria.
Strontium	ppb	CNR	N/A	7.8	0.1 - 7.8	N/A	Naturally occurring element; historically used in faceplate glass of cathode-ray tube televisions.
Vanadium	ppb	CNR	N/A	11	ND - 11	N/A	Naturally occurring element; used as vanadium pentoxide which is a chemical intermediate and a catalyst.
Chromium-6	ppb	CNR	N/A	0.5	0.1 - 0.5	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Chlorate	ppb	CNR	N/A	99	30 - 99	N/A	Agricultural defoliant: used in production of chlorine dioxide.
1,1-dichloroethane	ppb	CNR	N/A	0.1	ND - 0.1	N/A	Used as a solvent.
Chlorodifluoromethane (HCFC-22)	ppb	CNR	N/A	0.5	ND - 0.5	N/A	Used as a refrigerant.
Perfluorooctanoic acid (PFOA)	ppb	CNR	N/A	0.029	ND - 0.029	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films.

Definitions & Abbreviations used below:

Primary Standards: Standards which relate to public health. **MCLG:** Maximum Contaminant Level Goal. 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. **MCL:** Maximum Contaminant Level. 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. **MRDL:** Maximum Residual Disinfectant Level. 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. **MRDLG:** Maximum Residual Disinfectant Level Goal. 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. **Waiver:** State permission to reduce monitoring frequency because previous results have consistently been below the MCL. **ppt:** Parts Per Trillion. 1 ppt corresponds to 1 penny in \$10 billion. **ppb:** Parts

Per Billion. 1 ppb corresponds to 1 penny in \$10 million. **ppm:** Parts Per Million. 1 ppm corresponds to 1 penny in \$10 thousand. **mrem/year:** Millirems per year. A measure of radiation absorbed by the body. **N/A:** Not Applicable. **ND:** None Detectable at testing limit. **NR:** Not Reported. **<:** Less Than. **>:** Greater Than. **AL:** Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **CNR:** Currently Not Regulated. **NTU:** Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants. **pCi/l:** Picocuries per Liter. A measure of the radioactivity in water. **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water. **Turbidity MCL:** The Turbidity Level must be less than or equal to 0.3 NTU's in 95% of the samples taken every month and at no time exceed 1 NTU.

What Substances May be Found in the Source Water Before it is Treated?

The sources of drinking water (both tap water and bottled water) generally include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water moves over land or through the ground, it dissolves naturally occurring minerals and organics and can pick up substances resulting from the presence of animal or human activity. Substances that may be present in source waters prior to the treatment process include:

Microbial Contaminants: Such as viruses and bacteria, which may come from sewage treatment plants, septic systems, livestock and wildlife.

Inorganic Contaminants: Such as salts and metals, which can be naturally occurring or result from storm water runoff, wastewater discharges, or farming.

Pesticides and Herbicides: Which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.

Organic Chemical Contaminants: Including natural, synthetic and volatile organic chemicals, which are by-products of nature and industrial processes and petroleum production and can also come from gas stations, storm water runoff and septic systems.

Radioactive Contaminants: Which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

ANNUAL WATER QUALITY RESULTS - 2014

Primary Standards

Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Results		MCL Violation Yes/No	Major Sources in Drinking Water
				Highest Level used for Compliance	Range		
INORGANIC							
Arsenic	ppb	5	N/A	4.7	ND - 4.7	No	Erosion of natural deposits; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.18	0.03 - 0.18	No	Discharge from metal refineries; Erosion of natural deposits.
Selenium	ppb	50	50	2.3	ND - 2.3	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Nickel (Note 1)	ppb	N/A	N/A	N/A	ND - 1.2	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Fluoride	ppm	4	4	0.2	0.1 - 0.2	No	Erosion of natural deposits
Lead (Note 2)	ppb	AL=15	0	2.8	1 sample > AL	No	Corrosion of household plumbing systems
Copper (Note 2)	ppm	AL=1.3	1.3	0.4	N/A	No	Corrosion of household plumbing systems
Nitrate	ppm	10	10	3.6	1.1 - 3.6	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
MICROBIOLOGICAL							
Total Coliform Bacteria		>5% of monthly samples	0	0.6%	N/A	No	Naturally present in the environment
Turbidity	NTU's	TT = 1 NTU	0	0.30	N/A	No	Soil runoff
		TT= 95% of samples <0.3 NTU		99%	N/A		
Disinfectant Residuals (Chlorine/Chloramines)	ppm	>4 (MRDL)	>4 (MRDLG)	0.6	ND - 1.5	No	Water additive used to control microbes
DISINFECTANT BY-PRODUCTS							
Total Trihalomethanes (Note 4)	ppb	80	N/A	54	6 - 63	No	By-product of drinking water disinfection
Total Haloacetic Acids (Note 4)	ppb	60	N/A	34	3 - 42	No	By-product of drinking water disinfection
Bromate	ppb	10	N/A	6	ND - 6	No	By-product of drinking water disinfection
RADIOLOGICAL (Note 5)							
Beta & Photon emitters (Note 6)	pCi/l	50	0	4.3	1.7 - 4.3	No	Decay of natural and man-made deposits
Alpha emitters (Note 7)	pCi/l	15	0	12	1.4 - 12	No	Erosion of natural deposits
Uranium	ppb	30	0	12	ND - 12	No	Erosion of natural deposits
Radium (226 and 228)	pCi/l	5	0	1.1	ND - 1.1	No	Erosion of natural deposits
Additional Monitoring							
	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Detected	Range	MCL Violation Yes/No	Major Sources in Drinking Water
Additional contaminants for which we monitor that are currently not regulated by the EPA							
PFOA (Note 8)	ppt	CNR	N/A	6.8	3.3 - 6.8	N/A	Discharge from Industrial Chemical Factories
N-nitrosopyrrolidine (NPYR) (Note 9)	ppt	CNR	N/A	3.3	ND - 3.3	N/A	Reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria.
UCMR3 (Unregulated Contaminant Monitoring Rule) (Note 10)							
1,4 dioxane	ppb	CNR	N/A	0.2	ND - 0.2	N/A	Solvent or solvent stabilizer in manufacture of paper, cotton, textile products, auto coolant, cosmetics and shampoos.
Chromium (total)	ppb	100	100	0.5	ND - 0.5	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Molybdenum	ppb	CNR	N/A	16	ND - 16	N/A	Naturally occurring element found in ores and present in plant, animals and bacteria.
Strontium	ppm	CNR	N/A	7.6	0.1 - 7.6	N/A	Naturally occurring element; historically used in faceplate glass of cathode-ray tube televisions.
Vanadium	ppb	CNR	N/A	13	ND - 13	N/A	Naturally occurring element; used as vanadium pentoxide which is a chemical intermediate and a catalyst.
Chromium-6	ppb	CNR	N/A	0.1	0.0 - 0.6	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Chlorate	ppb	CNR	N/A	140	ND - 140	N/A	Agricultural defoliant: used in production of chlorine dioxide.
1,1-dichloroethane	ppb	CNR	N/A	0.1	ND - 0.1	N/A	Used as a solvent.
Chlorodifluoromethane (HCFC-22)	ppb	CNR	N/A	0.7	ND - 0.7	N/A	Used as a refrigerant.
Perfluorooctanoic acid (PFOA)	ppt	CNR	N/A	22	ND - 22	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films.

Note 1: There is no MCL for Nickel but it must be monitored.

Note 2: Middlesex Water Company is on reduced monitoring, once per three-year cycle. The listed Lead and Copper concentrations are the 90th Percentile Value.

Note 3: MCLs for these chemicals were set by the NJDEP below those set by the EPA.

Note 4: Compliance is based on Local Running Annual Averages of quarterly samples of individual sites.

Note 5: 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.

Note 6: The MCL for Beta Particles is 4 mrem/yr. EPA considers 50 pCi/l to be the level of concern for Beta Particles..

Note 7: The Gross Alpha compliance is determined minus the Radon and Uranium contribution.

Note 8: PFOA (Perfluorooctanoic Acid) is in a group of Perfluorinated compounds widely found in the environment. The health risk has not been determined but NJDEP has identified a guidance level of 40 ppt for PFOA ONLY. These samples were analyzed independently of the UCMR3 testing.

Secondary Standards (Non-Health Related)

Parameter	Units	RUL*	Results	
			Average	Range
Sodium	ppm	50	29	24 - 98
Alkalinity	ppm	N/A	66	24 - 208
Chloride	ppm	250	67	31 - 290
Hardness (as CaCO3)	ppm	250	128	32 - 902
Sulfate	ppm	250	92	17 - 540
Color	Color Units	10	2	2 - 3
pH	N/A	6.5 - 8.5 (optimum range)	7.4	6.7 - 8.3
Odor	Threshold Odor Number	3	2.3	<1 - 3.6
Total Dissolved Solids	ppm	500	290	152 - 1055
Aluminum	ppm	0.2	0.01	ND - 0
Zinc	ppm	5	0.3	0 - 0.4

*RUL: Recommended Upper Limit

Note 9: Reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria. Results are from 2012.

Note 10: The purpose of the UCMR monitoring is to provide the EPA Administrator with data to support decisions concerning whether or not to regulate these contaminants. Chromium (total), even though it is already regulated, is measured as part of the UCMR3 to determine its relationship to Chromium-6 and has a lower detection limit.

What the Numbers Mean to You

The table shows the results of monitoring during 2014. The EPA requires monitoring of over 100 drinking water contaminants. Those listed are the only contaminants detected. For a complete list of monitored contaminants, contact Middlesex Water Company at (732) 634-1500. As you can see, the Middlesex Water system had no MCL violations. The EPA has determined that your water is safe at these levels. The State requires water systems to monitor for certain contaminants less than once a year because the concentration of these contaminants is not expected to vary significantly from year to year. Therefore, some of these data may represent prior period testing that is considered representative of water quality.

HEALTH INFORMATION

Health Effects of Detected Contaminants (Required Language)

Arsenic – Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Sodium – 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 recommended upper limit may be a concern to individuals on a sodium restricted diet.

Required Additional Health Information

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, this 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.

A Word of Caution

Our treatment systems are designed and operated to produce water that meets all state and federal standards. Many substances and microscopic organisms found in water may be a concern if they occur at high concentrations. For some contaminants, MCL levels have not been set because the EPA has not determined at what level they pose a public health risk. This is often because a reliable detection method is unavailable and/or because the contaminant is rarely found in treated water.

Some naturally occurring organisms commonly found in the natural water supplies may not be eliminated during the treatment process. This means that even a well-run system may contain low levels of microscopic organisms. The levels, however, are normally of little concern to healthy individuals. It should be noted, however, that under certain circumstances, these organisms might amplify to dangerous levels within a customer's own water supply system. All customers, including residential, commercial and industrial customers, and other large facilities such as schools, hospitals and hotels/motels, should follow appropriate procedures for maintaining their own internal plumbing systems and appliances. If you have any concerns about these matters, please call the EPA Safe Drinking Water Hotline at 1-800-426-4791.

For Your Safety – A Message for People with Compromised Immune Systems

Although our drinking water meets all state and federal regulations, some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised individuals 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 individuals 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 pathogens are available from the EPA Safe Drinking Water Hotline at 1-800-426-4791.

Definitions & Abbreviations used below:

Primary Standards: Standards which relate to public health. **MCLG:** Maximum Contaminant Level Goal. 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. **MCL:** Maximum Contaminant Level. 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. **MRDL:** Maximum Residual Disinfectant Level. 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. **MRDLG:** Maximum Residual Disinfectant Level Goal. 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. **Waiver:** State permission to reduce monitoring frequency because previous results have consistently

been below the MCL. **ppt:** Parts Per Trillion. 1 ppt corresponds to 1 penny in \$10 billion. **ppb:** Parts Per Billion. 1 ppb corresponds to 1 penny in \$10 million. **ppm:** Parts Per Million. 1 ppm corresponds to 1 penny in \$10 thousand. **mrem/year:** Millirems per year. A measure of radiation absorbed by the body. **N/A:** Not Applicable. **ND:** None Detectable at testing limit. **NR:** Not Reported. **<:** Less Than. **>:** Greater Than. **AL:** Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **CNR:** Currently Not Regulated. **NTU:** Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants. **pCi/l:** Picocuries per Liter. A measure of the radioactivity in water. **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water. **Turbidity MCL:** The Turbidity Level must be less than or equal to 0.3 NTU's in 95% of the samples taken every month and at no time exceed 1 NTU.

Middlesex Water Company Annual Water Quality Results - 2015							Primary Standards
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Results		MCL Violation Yes/No	Major Sources in Drinking Water
				Highest Level used for Compliance	Range		
INORGANIC							
Arsenic	ppb	5	N/A	4.7	ND - 4.7	No	Erosion of natural deposits; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.18	0.02 - 0.18	No	Discharge from metal refineries; Erosion of natural deposits.
Selenium	ppb	50	50	2.3	ND - 2.3	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Nickel (1)	ppb	N/A	N/A	N/A	ND - 1.2	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Fluoride	ppm	4	4	0.05	0.5 - 0.2	No	Erosion of natural deposits
Lead (2)	ppb	AL=15	0	2.8	1 sample > AL	No	Corrosion of household plumbing systems
Copper (2)	ppm	AL=1.3	1.3	0.4	N/A	No	Corrosion of household plumbing systems
Nitrate	ppm	10	10	3.6	1.2 - 3.6	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
VOLATILE ORGANICS							
Trichloroethylene	ppb	1	0	0.6	ND - 0.6	No	Discharge from metal degreasing sites and other factories
Toluene	ppm	1	1	0.0006	ND - 0.0006	No	Discharge from petroleum factories
MICROBIOLOGICAL							
Total Coliform Bacteria		>5% of monthly samples	0	0.6%	N/A	No	Naturally present in the environment
Turbidity	NTU's	TT = 1 NTU	0	0.30	N/A	No	Soil runoff
		TT = 95% of samples <0.3 NTU		100%	N/A		
Disinfectant Residuals (Chlorine/Chloramines)	ppm	>4 (MRDL)	>4 (MRDLG)	0.7	ND - 2.1	No	Water additive used to control microbes
DISINFECTION BY-PRODUCTS							
Total Trihalomethanes (4)	ppb	80	N/A	41	7 - 60	No	By-product of drinking water disinfection
Total Haloacetic Acids (4)	ppb	60	N/A	30	2 - 46	No	By-product of drinking water disinfection
Bromate	ppb	10	N/A	2	ND - 2	No	By-product of drinking water disinfection
RADIOLOGICAL (5)							
Beta & Photon emitters (6)	pCi/l	50	0	4.3	1.7 - 4.3	No	Decay of natural and man-made deposits
Alpha emitters (7)	pCi/l	15	0	12	1.4 - 12	No	Erosion of natural deposits
Uranium	ppb	30	0	12	ND - 12	No	Erosion of natural deposits
Radium (226 and 228)	pCi/l	5	0	1.1	ND - 1.1	No	Erosion of natural deposits
Additional Monitoring							
Additional Monitoring	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Detected	Range	MCL Violation Yes/No	Major Sources in Drinking Water
Additional contaminants for which we monitor that are currently not regulated by the EPA							
PFOA (8)	ppt	CNR	N/A	7.2	ND - 7.2	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films.
PFHA	ppt	CNR	N/A	3.4	ND - 3.4	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films.
Perchlorate	ppb	CNR	N/A	1.3	0.6 - 1.3	N/A	Oxygen additive in solid fuel propellant for rockets
N-nitrosopyrrolidine (NPYR) (9)	ppt	CNR	N/A	3.3	ND - 3.3	N/A	Reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria.
Strontium	ppm	CNR	N/A	2.0	1.2 - 2.0	N/A	Reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria.
Chlorate	ppb	CNR	N/A	160	71 - 160	N/A	Reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria.
UCMR3 (Unregulated Contaminant Monitoring Rule) (10)							
1,4 dioxane	ppb	CNR	N/A	0.2	ND - 0.2	N/A	Solvent or solvent stabilizer in manufacture of paper, cotton, textile products, auto coolant, cosmetics and shampoos.
Chromium (total)	ppb	100	100	0.5	ND - 0.5	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Molybdenum	ppb	CNR	N/A	16	ND - 16	N/A	Naturally occurring element found in ores and present in plant, animals and bacteria.
Vanadium	ppb	CNR	N/A	13	ND - 13	N/A	Naturally occurring element; used as vanadium pentoxide which is a chemical intermediate and a catalyst.
Chromium-6	ppb	CNR	N/A	0.6	0.0 - 0.6	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation.
1,1-dichloroethane	ppb	CNR	N/A	0.1	ND - 0.1	N/A	Used as a solvent.
Chlorodifluoromethane (HCFC-22)	ppb	CNR	N/A	0.7	ND - 0.7	N/A	Used as a refrigerant.

1: There is no MCL for Nickel but it must be monitored.

2: Middlesex Water Company is on reduced monitoring, once per three-year cycle. Data is from 2013. The listed Lead and Copper concentrations are the 90th Percentile Value.

3: MCLs for these chemicals were set by the NJDEP below those set by the EPA.

4: Compliance is based on Local Running Annual Averages of quarterly samples of individual sites.

5: 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.

6: The MCL for Beta Particles is 4 mrem/yr. EPA considers 50 pCi/l to be the level of concern for Beta Particles.

7: The Gross Alpha compliance is determined minus the Radon and Uranium contribution.

8: PFOA (Perfluorooctanoic Acid) is in a group of Perfluorinated compounds widely found in the environment. The health risk has not been determined but NJDEP has identified a guidance level of 40 ppt for PFOA ONLY. These samples were analyzed independently of the UCMR3 testing.

9: Reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria. Results are from 2012.

10: The purpose of the UCMR monitoring is to provide the EPA Administrator with data to support decisions concerning whether or not to regulate these contaminants. Chromium (total), even though it is already regulated, is measured as part of the UCMR3 to determine its relationship to Chromium-6 and has a lower detection limit. Results are from 2014.

Definitions & Abbreviations used below:

Primary Standards: Standards which relate to public health. **MCLG:** Maximum Contaminant Level Goal. 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. **MCL:** Maximum Contaminant Level. 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. **MRDL:** Maximum Residual Disinfectant Level. 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. **MRDLG:** Maximum Residual Disinfectant Level Goal. 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. **Waiver:** State permission to reduce monitoring frequency because previous results have consistently

been below the MCL. **ppt:** Parts Per Trillion. 1 ppt corresponds to 1 penny in \$10 billion. **ppb:** Parts Per Billion. 1 ppb corresponds to 1 penny in \$10 million. **ppm:** Parts Per Million. 1 ppm corresponds to 1 penny in \$10 thousand. **mrem/year:** Millirems per year. A measure of radiation absorbed by the body. **N/A:** Not Applicable. **ND:** None Detectable at testing limit. **NR:** Not Reported. **<:** Less Than. **>:** Greater Than. **AL:** Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **CNR:** Currently Not Regulated. **NTU:** Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants. **pCi/l:** Picocuries per Liter. A measure of the radioactivity in water. **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water. **Turbidity MCL:** The Turbidity Level must be less than or equal to 0.3 NTU's in 95% of the samples taken every month and at no time exceed 1 NTU.

Middlesex Water Company Annual Water Quality Results - 2016							Primary Standards
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Results		MCL Violation Yes/No	Major Sources in Drinking Water
				Highest Level used for Compliance	Range		
INORGANIC							
Arsenic (1)	ppb	5	N/A	1.5	ND - 1.5	No	Erosion of natural deposits; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.18	0.02 - 0.18	No	Discharge from metal refineries; Erosion of natural deposits.
Selenium	ppb	50	50	1.5	ND - 1.5	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Nickel (2)	ppb	N/A	N/A	N/A	ND - 0.8	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Fluoride	ppm	4	4	0.07	0.05 - 0.07	No	Erosion of natural deposits
Lead (3)	ppb	AL=15	0	2.0	3 samples > AL	No	Corrosion of household plumbing systems
Copper (3)	ppm	AL=1.3	1.3	0.20	N/A	No	Corrosion of household plumbing systems
Nitrate	ppm	10	10	3.6	0.6 - 3.6	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
MICROBIOLOGICAL							
Turbidity	NTU's	TT = 1 NTU	0	0.30	N/A	No	Soil runoff
		TT = 95% of samples <0.3 NTU		100%	N/A		
Disinfectant Residuals (Chlorine/Chloramines)	ppm	>4 (MRDL)	>4 (MRDLG)	0.80	ND - 2.0	No	Water additive used to control microbes
DISINFECTION BY-PRODUCTS							
Total Trihalomethanes (4)	ppb	80	N/A	45	7 - 72	No	By-product of drinking water disinfection
Total Haloacetic Acids (4)	ppb	60	N/A	32	1 - 38	No	By-product of drinking water disinfection
Bromate	ppb	10	N/A	2	ND - 2	No	By-product of drinking water disinfection
RADIOLOGICAL (5)							
Beta & Photon emitters (6)	pCi/l	50	0	3.6	N/A	No	Decay of natural and man-made deposits
Alpha emitters (7)	pCi/l	15	0	2	N/A	No	Erosion of natural deposits
Uranium	ppb	30	0	2	N/A	No	Erosion of natural deposits
Additional Monitoring	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Detected	Range	MCL Violation Yes/No	Major Sources in Drinking Water
Additional contaminants for which we monitor that are currently not regulated by the EPA							
PFOA (8)	ppt	CNR	N/A	21	ND - 21	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFOS	ppt	CNR	N/A	10	ND - 10	N/A	
PFHxA	ppt	CNR	N/A	6	ND - 6	N/A	
PFHxS	ppt	CNR	N/A	8	ND - 8	N/A	
PFHepA	ppt	CNR	N/A	5	ND - 5	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFBS	ppt	CNR	N/A	ND	ND	N/A	
Perchlorate	ppb	CNR	N/A	1.5	N/A	N/A	Oxygen additive in solid fuel propellant for rockets
N-nitrosopyrrolidine (NPYR) (9)	ppt	CNR	N/A	3.3	ND - 3.3	N/A	Reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria
Chlorate	ppb	CNR	N/A	310	ND - 310	N/A	Reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria
UCMR3 (Unregulated Contaminant Monitoring Rule) (10)							
1,4 dioxane	ppb	CNR	N/A	0.2	ND - 0.2	N/A	Solvent or solvent stabilizer in manufacture of paper, cotton, textile products, auto coolant, cosmetics and shampoos
Chromium (total)	ppb	100	100	1	ND - 1	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Molybdenum	ppb	CNR	N/A	16	ND - 16	N/A	Naturally occurring element found in ores and present in plant, animals and bacteria
Strontium	ppb	CNR	N/A	176	79 - 176	N/A	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	ppb	CNR	N/A	13	ND - 13	N/A	Naturally occurring element; used as vanadium pentoxide which is a chemical intermediate and a catalyst
Chromium-6	ppb	CNR	N/A	0.8	0.3 - 0.8	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation
1,1-dichloroethane	ppb	CNR	N/A	0.1	ND - 0.1	N/A	Used as a solvent
Chlorodifluoromethane (HCFC-22)	ppb	CNR	N/A	0.7	ND - 0.7	N/A	Used as a refrigerant

Secondary Standards (Non-Health Related)				
Parameter	Units	RUL*	Results	
			Average	Range
Sodium	ppm	50	35	20-100
Alkalinity	ppm	N/A	66	28-190
Chlorides	ppm	250	59	34-190
Color	Color Units	10	2	2-3
Hardness	ppm	250	102	34-302
Sulfates	ppm	250	28	16-64
Odor	Threshold Odor Number	3	4	3-4
pH	N/A	6.5 - 8.5 (optimum range)	7.6	7.1-8.3
Total Dissolved Solids	ppm	500	226	169-395
Zinc	ppm	5	0.4	0.002-0.6
Aluminum	ppm	0.2	0.0005	ND-0.001

*RUL: Recommended Upper Limit

- MCLs for these chemicals were set by the NJDEP below those set by the EPA.
- There is no MCL for Nickel but it must be monitored.
- Middlesex Water Company is on reduced monitoring, once per three-year cycle. The listed Lead and Copper concentrations are the 90th Percentile Value.
- Compliance is based on Local Running Annual Averages of quarterly samples of individual sites.
- The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.
- The MCL for Beta Particles is 4 mrem/yr. EPA considers 50 pCi/l to be the level of concern for Beta Particles.
- The Gross Alpha compliance is determined minus the Radon and Uranium contribution.
- PFOA (Perfluorooctanoic Acid) is in a group of Perfluorinated compounds widely found in the environment. The health risk has not been determined but NJDEP has identified a guidance level of 40 ppt for PFOA ONLY. These samples were analyzed independently of the UCMR3 testing.
- Reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria. Results are from 2012.
- The purpose of the UCMR monitoring is to provide the EPA Administrator with data to support decisions concerning whether or not to regulate these contaminants. Chromium (total), even though it is already regulated, is measured as part of the UCMR3 to determine its relationship to Chromium-6 and has a lower detection limit. Results are from 2014 and 2016.

Definitions & Abbreviations used below:

Primary Standards: Standards which relate to public health. **MCLG:** Maximum Contaminant Level Goal. 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. **MCL:** Maximum Contaminant Level. 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. **MRDL:** Maximum Residual Disinfectant Level. 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. **MRDLG:** Maximum Residual Disinfectant Level Goal. 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. **Waiver:** State permission to reduce monitoring frequency because previous results have consistently

been below the MCL. **ppt:** Parts Per Trillion. 1 ppt corresponds to 1 penny in \$10 billion. **ppb:** Parts Per Billion. 1 ppb corresponds to 1 penny in \$10 million. **ppm:** Parts Per Million. 1 ppm corresponds to 1 penny in \$10 thousand. **mrem/year:** Millirems per year. A measure of radiation absorbed by the body. **N/A:** Not Applicable. **ND:** None Detectable at testing limit. **NR:** Not Reported. **<**: Less Than. **>**: Greater Than. **AL:** Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **CNR:** Currently Not Regulated. **NTU:** Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants. **pCi/l:** Picocuries per Liter. A measure of the radioactivity in water. **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water. **Turbidity MCL:** The Turbidity Level must be less than or equal to 0.3 NTU's in 95% of the samples taken every month and at no time exceed 1 NTU.

Middlesex Water Company Annual Water Quality Results - 2017							Primary Standards
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Results		MCL Violation Yes/No	Major Sources in Drinking Water
				Highest Level used for Compliance	Range		
INORGANIC							
Arsenic (1)	ppb	5	N/A	1.1	ND - 1.1	No	Erosion of natural deposits; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.18	0.02 - 0.18	No	Discharge from metal refineries; Erosion of natural deposits.
Chromium (total)	ppb	100	100	0.7	ND - 0.7	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Selenium	ppb	50	50	1.5	ND - 1.0	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Nickel (2)	ppb	N/A	N/A	N/A	1.1 - 1.2	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Fluoride	ppm	4	4	0.05	ND - 0.05	No	Erosion of natural deposits
Lead (3)	ppb	AL=15	0	1.3	4 samples > AL	No	Corrosion of household plumbing systems
Copper (3)	ppm	AL=1.3	1.3	0.23	N/A	No	Corrosion of household plumbing systems
Nitrate	ppm	10	10	3.8	0.5 - 3.8	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
MICROBIOLOGICAL							
Turbidity	NTU's	TT = 1 NTU	0	0.30	N/A	No	Soil runoff
		TT = 95% of samples <0.3 NTU		100%	N/A		
Disinfectant Residuals (Chlorine/Chloramines)	ppm	>4 (MRDL)	>4 (MRDLG)	0.80	ND - 1.5	No	Water additive used to control microbes
DISINFECTION BY-PRODUCTS							
Total Trihalomethanes (4)	ppb	80	N/A	48	6 - 81	No	By-product of drinking water disinfection
Total Haloacetic Acids (4)	ppb	60	N/A	35	1 - 44	No	By-product of drinking water disinfection
Bromate	ppb	10	N/A	2	ND - 1.1	No	By-product of drinking water disinfection
RADIOLOGICAL (5)							
Beta & Photon emitters (6)	pCi/l	50	0	1.6	N/A	No	Decay of natural and man-made deposits
Alpha emitters (7)	pCi/l	15	0	2	N/A	No	Erosion of natural deposits
Uranium	ppb	30	0	2	N/A	No	Erosion of natural deposits
Additional Monitoring	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Detected	Range	MCL Violation Yes/No	Major Sources in Drinking Water
Additional contaminants for which we monitor that are currently not regulated by the EPA							
PFOA (8)	ppt	CNR	N/A	23	ND - 23	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFOS	ppt	CNR	N/A	6	ND - 6	N/A	
PFHxA	ppt	CNR	N/A	6	ND - 6	N/A	
PFHxS	ppt	CNR	N/A	7	ND - 7	N/A	
PFHepA	ppt	CNR	N/A	4	ND - 4	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
Perchlorate	ppb	CNR	N/A	1.5	N/A	N/A	Oxygen additive in solid fuel propellant for rockets
Chlorate	ppb	CNR	N/A	310	ND - 310	N/A	Agricultural defoliant; used in production of chlorine dioxide
Chromium-6	ppb	CNR	N/A	0.8	0.1 - 0.8	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation
UCMR3 (Unregulated Contaminant Monitoring Rule) (9)							
1,4 dioxane	ppb	CNR	N/A	1.1	ND - 1.1	N/A	Solvent or solvent stabilizer in manufacture of paper, cotton, textile products, auto coolant, cosmetics and shampoos
Molybdenum	ppb	CNR	N/A	16	ND - 16	N/A	Naturally occurring element found in ores and present in plant, animals and bacteria
Strontium	ppb	CNR	N/A	176	79 - 176	N/A	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	ppb	CNR	N/A	13	ND - 13	N/A	Naturally occurring element; used as vanadium pentoxide which is a chemical intermediate and a catalyst
Chromium-6	ppb	CNR	N/A	0.8	0.1 - 0.8	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation
1,1-dichloroethane	ppb	CNR	N/A	0.1	ND - 0.1	N/A	Used as a solvent
Chlorodifluoromethane (HCFC-22)	ppb	CNR	N/A	0.7	ND - 0.7	N/A	Used as a refrigerant

Secondary Standards (Non-Health Related)				
Parameter	Units	RUL*	Results	
			Average	Range
Sodium	ppm	50	35	22-77
Alkalinity	ppm	N/A	81	26-198
Chlorides	ppm	250	71	36-226
Color	Color Units	10	2	1-3
Hardness	ppm	250	152	44-298
Sulfates	ppm	250	28	16-38.9
Odor	Threshold Odor Number	3	4	3-4
pH	N/A	6.5 - 8.5 (optimum range)	7.6	7.2-8.3
Total Dissolved Solids	ppm	500	294	184-404
Zinc	ppm	5	0.2	0.003-0.4
Aluminum	ppm	0.2	0.0007	ND-0.02

*RUL: Recommended Upper Limit

- MCLs for these chemicals were set by the NJDEP below those set by the EPA.
- There is no MCL for Nickel but it must be monitored.
- The listed Lead and Copper concentrations are the 90th Percentile Value.
- Compliance is based on Local Running Annual Averages of quarterly samples of individual sites.
- The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.
- The MCL for Beta Particles is 4 mrem/yr. EPA considers 50 pCi/l to be the level of concern for Beta Particles.
- The Gross Alpha compliance is determined minus the Radon and Uranium contribution.
- PFOA (Perfluorooctanoic Acid) is in a group of Perfluorinated compounds widely found in the environment. NJDEP has proposed an MCL of 14 ppt for PFOA ONLY.
- The purpose of the UCMR monitoring is to provide the EPA Administrator with data to support decisions concerning whether or not to regulate these contaminants. Results are from 2014 and 2017.

Definitions & Abbreviations used below:

Primary Standards: Standards which relate to public health. **MCLG:** Maximum Contaminant Level Goal. 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. **MCL:** Maximum Contaminant Level. 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. **MRDL:** Maximum Residual Disinfectant Level. 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. **MRDLG:** Maximum Residual Disinfectant Level Goal. 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. **Waiver:** State permission to reduce monitoring frequency because previous results have consistently

been below the MCL. **ppt:** Parts Per Trillion. 1 ppt corresponds to 1 penny in \$10 billion. **ppb:** Parts Per Billion. 1 ppb corresponds to 1 penny in \$10 million. **ppm:** Parts Per Million. 1 ppm corresponds to 1 penny in \$10 thousand. **mrem/year:** Millirems per year. A measure of radiation absorbed by the body. **N/A:** Not Applicable. **ND:** None Detectable at testing limit. **NR:** Not Reported. **<**: Less Than. **>**: Greater Than. **AL:** Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **CNR:** Currently Not Regulated. **NTU:** Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants. **pCi/l:** Picocuries per Liter. A measure of the radioactivity in water. **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water. **Turbidity MCL:** The Turbidity Level must be less than or equal to 0.3 NTU's in 95% of the samples taken every month and at no time exceed 1 NTU.

Middlesex Water Company Annual Water Quality Results - 2018							Primary Standards
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Results		MCL Violation Yes/No	Major Sources in Drinking Water
				Highest Level used for Compliance	Range		
INORGANIC							
Arsenic (1)	ppb	5	N/A	2	ND - 2	No	Erosion of natural deposits; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	2	0.02 - 2	No	Discharge from metal refineries; Erosion of natural deposits.
Chromium (total)	ppb	100	100	1	ND - 1	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Selenium	ppb	50	50	2	ND - 2	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Nickel (2)	ppb	N/A	N/A	N/A	1 - 2	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Fluoride	ppm	4	4	0.1	ND - 0.1	No	Erosion of natural deposits
Lead (3)	ppb	AL=15	0	1.4	N/A	No	Corrosion of household plumbing systems
Copper (3)	ppm	AL=1.3	1.3	0.2	N/A	No	Corrosion of household plumbing systems
Nitrate	ppm	10	10	4	1 - 4	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
MICROBIOLOGICAL							
Turbidity	NTU's	TT = 1 NTU	0	0.2	N/A	No	Soil runoff
		TT = 95% of samples <0.3 NTU		100%	N/A		
Disinfectant Residuals (Chlorine/Chloramines)	ppm	>4 (MRDL)	>4 (MRDLG)	0.9	ND - 1.5	No	Water additive used to control microbes
DISINFECTION BY-PRODUCTS							
Total Trihalomethanes (4)	ppb	80	N/A	53	5 - 117	No	By-product of drinking water disinfection
Total Haloacetic Acids (4)	ppb	60	N/A	44	ND - 80	No	By-product of drinking water disinfection
Bromate	ppb	10	N/A	2	ND - 2	No	By-product of drinking water disinfection
RADIOLOGICAL (5)							
Beta & Photon emitters (6)	pCi/l	50	0	1.6	N/A	No	Decay of natural and man-made deposits
Alpha emitters (7)	pCi/l	15	0	5	2 - 5	No	Erosion of natural deposits
Uranium	ppb	30	0	14	2 - 14	No	Erosion of natural deposits
Additional Monitoring	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Detected	Range	MCL Violation Yes/No	Major Sources in Drinking Water
Additional contaminants for which we monitor that are currently not regulated by the EPA							
PFOA (8)	ppt	CNR	N/A	25	4 - 25	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFBS (8)	ppt	CNR	N/A	4	ND - 4	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFOS (8)	ppt	CNR	N/A	10	ND - 10	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFHxA (8)	ppt	CNR	N/A	7	2 - 7	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFHxS (8)	ppt	CNR	N/A	8	ND - 8	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFHepA (8)	ppt	CNR	N/A	6	ND - 6	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
Perchlorate	ppb	CNR	N/A	1.5	N/A	N/A	Oxygen additive in solid fuel propellant for rockets
Chlorate	ppb	CNR	N/A	240	61 - 240	N/A	Agricultural defoliant; used in production of chlorine dioxide
Chromium-6	ppb	CNR	N/A	0.75	0.05 - 0.75	N/A	Naturally-occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation
1,4 dioxane	ppb	CNR	N/A	0.3	ND - 0.3	N/A	Solvent or solvent stabilizer in manufacture of paper, cotton, textile products, auto coolant, cosmetics and shampoos
Strontium	ppm	CNR	N/A	5.8	0.8 - 5.8	N/A	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Chromium-6	ppb	CNR	N/A	0.75	0.05-0.75	N/A	Naturally-occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation
UCMR4 (Unregulated Contaminant Monitoring Rule) (9)							
Germanium	ppb	CNR	N/A	0.7	ND - 0.7	N/A	Naturally-occurring element; commercially available in combination with other elements and minerals; a byproduct of zinc ore processing; used in infrared optics, fiber-optic systems, electronics and solar applications
Manganese	ppb	CNR	N/A	29	ND - 29	N/A	Naturally-occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient
Haloacetic Acids (HAA6Br)	ppb	CNR	N/A	12	2 - 12	N/A	By-product of drinking water disinfection
Haloacetic Acids (HAA9)	ppb	CNR	N/A	49	2 - 49	N/A	By-product of drinking water disinfection

Secondary Standards (Non-Health Related)				
Parameter	Units	RUL*	Results	
			Average	Range
Sodium	ppm	50	38	22 - 89
Alkalinity	ppm	N/A	78	30 - 188
Chlorides	ppm	250	72	36 - 193
Color	Color Units	10	2	2 - 10
Hardness	ppm	250	158	36 - 1000
Sulfates	ppm	250	25	13-660
Odor	Threshold Odor Number	3	1	N/A
pH	N/A	6.5 - 8.5 (optimum range)	7.5	7.2 - 8.2
Total Dissolved Solids	ppm	500	239	190-1200
Zinc	ppm	5	0.2	0.003-0.5
Aluminum	ppm	0.2	0.007	ND-0.02

- MCLs for these chemicals were set by the NJDEP below those set by the EPA.
- There is no MCL for Nickel but it must be monitored.
- The listed Lead and Copper concentrations are the 90th Percentile Value.
- Compliance is based on Local Running Annual Averages of quarterly samples of individual sites.
- The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.
- The MCL for Beta Particles is 4 mrem/yr. EPA considers 50 pCi/l to be the level of concern for Beta Particles.
- The Gross Alpha compliance is determined minus the Radon and Uranium contribution.
- These contaminants are in a group of Perfluorinated compounds widely found in the environment. They are not currently regulated but the EPA has established a Health Action Level (HAL) of 70 ppt for the combined total of PFOA and PFOS.
- The purpose of the UCMR monitoring is to provide the EPA Administrator with data to support decisions concerning whether or not to regulate these contaminants. Results are from 2018.

*RUL: Recommended Upper Limit

Definitions & Abbreviations used below:

Primary Standards: Standards which relate to public health. **MCLG:** Maximum Contaminant Level Goal. 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. **MCL:** Maximum Contaminant Level. 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. **MRDL:** Maximum Residual Disinfectant Level. 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. **MRDLG:** Maximum Residual Disinfectant Level Goal. 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. **Waiver:** State permission to reduce monitoring frequency because previous results have consistently

been below the MCL. **ppt:** Parts Per Trillion. 1 ppt corresponds to 1 penny in \$10 billion. **ppb:** Parts Per Billion. 1 ppb corresponds to 1 penny in \$10 million. **ppm:** Parts Per Million. 1 ppm corresponds to 1 penny in \$10 thousand. **mrem/year:** Millirems per year. A measure of radiation absorbed by the body. **N/A:** Not Applicable. **ND:** None Detectable at testing limit. **NR:** Not Reported. **<**: Less Than. **>**: Greater Than. **AL:** Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **CNR:** Currently Not Regulated. **NTU:** Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants. **pCi/l:** Picocuries per Liter. A measure of the radioactivity in water. **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water. **Turbidity MCL:** The Turbidity Level must be less than or equal to 0.3 NTU's in 95% of the samples taken every month and at no time exceed 1 NTU.

Middlesex Water Company Annual Water Quality Results - 2019							Primary Standards
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Results		MCL Violation Yes/No	Major Sources in Drinking Water
				Highest Level used for Compliance	Range		
INORGANIC							
Arsenic (I)	ppb	5	N/A	2	ND - 2	No	Erosion of natural deposits; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.03	0.02 - 0.03	No	Discharge from metal refineries; Erosion of natural deposits.
Chromium (total)	ppb	100	100	1	ND - 1	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Selenium	ppb	50	50	1	ND - 1	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Nickel (2)	ppb	N/A	N/A	N/A	1 - 2	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Fluoride	ppm	4	4	0.1	ND - 0.1	No	Erosion of natural deposits
Lead (3)	ppb	AL=15	0	0.9	N/A	No	Corrosion of household plumbing systems
Copper (3)	ppm	AL=1.3	1.3	0.14	N/A	No	Corrosion of household plumbing systems
Nitrate	ppm	10	10	4	1 - 4	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
MICROBIOLOGICAL							
Turbidity	NTU's	TT = 1 NTU	0	0.4	N/A	No	Soil runoff
		TT = 95% of samples <0.3 NTU		99.9%	N/A		
Disinfectant Residuals (Chlorine/Chloramines)	ppm	>4 (MRDL)	>4 (MRDLG)	0.7	0.1 - 13.2	No	Water additive used to control microbes
DISINFECTION BY-PRODUCTS							
Total Trihalomethanes (4)	ppb	80	N/A	52	1 - 77	No	By-product of drinking water disinfection
Total Haloacetic Acids (4)	ppb	60	N/A	47	3 - 46	No	By-product of drinking water disinfection
Bromate	ppb	10	N/A	1.4	ND - 1.4	No	By-product of drinking water disinfection
RADIOLOGICAL (5)							
Beta & Photon emitters (6)	pCi/l	50	0	1.6	N/A	No	Decay of natural and man-made deposits
Alpha emitters (7)	pCi/l	15	0	5	ND - 5	No	Erosion of natural deposits
Uranium	ppb	30	0	14	2 - 14	No	Erosion of natural deposits
Additional Monitoring	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Detected	Range	MCL Violation Yes/No	Major Sources in Drinking Water
Additional contaminants for which we monitor that are currently not regulated by the EPA							
PFOA (8)	ppt	CNR	N/A	28	3 - 28	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFBS (8)	ppt	CNR	N/A	5	ND - 5	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFOS (8)	ppt	CNR	N/A	13	ND - 13	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFHxA (8)	ppt	CNR	N/A	8	ND - 8	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFHxS (8)	ppt	CNR	N/A	8	ND - 8	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFHepA (8)	ppt	CNR	N/A	6	ND - 6	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
Perchlorate	ppb	CNR	N/A	1.8	0.1 - 1.8	N/A	Oxygen additive in solid fuel propellant for rockets
Chlorate	ppb	CNR	N/A	310	ND - 310	N/A	Agricultural defoliant; used in production of chlorine dioxide
Chromium-6	ppb	CNR	N/A	0.75	0.05 - 0.75	N/A	Naturally-occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation
1,4 dioxane	ppb	CNR	N/A	1.4	ND - 1.4	N/A	Solvent or solvent stabilizer in manufacture of paper, cotton, textile products, auto coolant, cosmetics and shampoos
Strontium	ppm	CNR	N/A	0.8	0.7 - 0.8	N/A	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
UCMR4 (Unregulated Contaminant Monitoring Rule) (9)							
Germanium	ppb	CNR	N/A	0.7	ND - 0.7	N/A	Naturally-occurring element; commercially available in combination with other elements and minerals; a byproduct of zinc ore processing; used in infrared optics, fiber-optic systems, electronics and solar applications
Manganese	ppb	CNR	N/A	29	ND - 29	N/A	Naturally-occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient
Haloacetic Acids (HAA6Br)	ppb	CNR	N/A	12	2 - 12	N/A	By-product of drinking water disinfection
Haloacetic Acids (HAA9)	ppb	CNR	N/A	49	2 - 49	N/A	By-product of drinking water disinfection

Secondary Standards (Non-Health Related)				
Parameter	Units	RUL*	Results	
			Average	Range
Sodium	ppm	50	36	23 - 107
Alkalinity	ppm	N/A	63	30 - 180
Chlorides	ppm	250	49	37 - 195
Color	Color Units	10	2	2 - 3
Hardness	ppm	250	98	42-842
Sulfates	ppm	250	20	14-660
Odor	Threshold Odor Number	3	4	N/A
pH	N/A	6.5 - 8.5 (optimum range)	7.5	6.9 - 8.2
Total Dissolved Solids	ppm	500	209	147-1200
Zinc	ppm	5	0.5	0.35 - 0.63
Aluminum	ppm	0.2	0.003	ND-0.03

TT Violation	Explanation of the TT Violation	Length of Violation	Steps Taken to Correct the Violation	Health Effects Language
Failure to meet minimum pH Water Quality Parameter (WQP) for Corrosion Control Treatment as part of the Lead and Copper Rule for greater than 9 days.	This issue impacted only a small portion of residents in Carteret and Avenel previously notified by letters. Due to major construction on a transmission main we had to take water from another location in our distribution system. The source water, which has an approved minimum pH of 6.7, lowered the pH at 1 site that normally doesn't see this water. The pH of the water was measured at 6.9 but the approved minimum is 7.2. During this time Lead and Copper sampling met Action Level (AL) of the Lead and Copper Rule. See Water Quality Results Table.	43 days	Increased sampling of Lead and Copper. Working with NJDEP to do follow up monitoring to re-establish the pH minimum	pH has no health effects. However, changes in pH could potentially impact the effectiveness of the corrosion control process, thereby impacting the levels of lead and copper which could potentially be present at higher levels. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink water with high levels of lead and copper over many years could develop kidney problems or high blood pressure.

- MCLs for these chemicals were set by the NJDEP below those set by the EPA.
- There is no MCL for Nickel but it must be monitored.
- The listed Lead and Copper concentrations are the 90th Percentile Value.
- Compliance is based on Local Running Annual Averages of quarterly samples of individual sites. For example, for the 1st quarter LRAA you use the last 3 quarters of the previous year with the 1st quarter of the current year so the highest quarter LRAA may be greater than the range for the current year.
- The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

- The MCL for Beta Particles is 4 mrem/yr. EPA considers 50 pCi/l to be the level of concern for Beta Particles.
- The Gross Alpha compliance is determined minus the Radon and Uranium contribution.
- These contaminants are in a group of Perfluorinated compounds widely found in the environment. They are not currently regulated but the EPA has established a Health Action Level (HAL) of 70 ppt for the combined total of PFOA and PFOS.
- The purpose of the UCMR monitoring is to provide the EPA Administrator with data to support decisions concerning whether or not to regulate these contaminants. Results are from 2019.

*RUL: Recommended Upper Limit

Definitions & Abbreviations used below:

Primary Standards: Standards which relate to public health. **MCLG:** Maximum Contaminant Level Goal. 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. **MCL:** Maximum Contaminant Level. 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. **MRDL:** Maximum Residual Disinfectant Level. 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. **MRDLG:** Maximum Residual Disinfectant Level Goal. 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. **Waiver:** State permission to reduce monitoring frequency because previous results have consistently

been below the MCL. **ppt:** Parts Per Trillion. 1 ppt corresponds to 1 penny in \$10 billion. **ppb:** Parts Per Billion. 1 ppb corresponds to 1 penny in \$10 million. **ppm:** Parts Per Million. 1 ppm corresponds to 1 penny in \$10 thousand. **mrem/year:** Millirems per year. A measure of radiation absorbed by the body. **N/A:** Not Applicable. **ND:** None Detectable at testing limit. **NR:** Not Reported. **<**: Less Than. **>**: Greater Than. **AL:** Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **CNR:** Currently Not Regulated. **NTU:** Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants. **pCi/l:** Picocuries per Liter. A measure of the radioactivity in water. **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water. **Turbidity MCL:** The Turbidity Level must be less than or equal to 0.3 NTU's in 95% of the samples taken every month and at no time exceed 1 NTU.

Middlesex Water Company Annual Water Quality Results - 2020							Primary Standards
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Results		MCL Violation Yes/No	Major Sources in Drinking Water
				Highest Level used for Compliance	Range		
INORGANIC							
Arsenic (1)	ppb	5	N/A	1	ND - 1	No	Erosion of natural deposits; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.2	0.03 - 0.2	No	Discharge from metal refineries; Erosion of natural deposits.
Chromium (total)	ppb	100	100	1	ND - 1	N/A	Naturally occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Nickel (2)	ppb	N/A	N/A	1.2	N/A	No	Discharge from petroleum and metal refineries; Erosion of natural deposits.
Lead (3)	ppb	AL=15	0	1.7	N/A	No	Corrosion of household plumbing systems
Copper (3)	ppm	AL=1.3	1.3	0.21	N/A	No	Corrosion of household plumbing systems
Nitrate	ppm	10	10	4	1 - 4	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
MICROBIOLOGICAL							
Turbidity	NTU's	TT = 1 NTU TT = 95% of samples <0.3 NTU	0	0.5	N/A	No	Soil runoff
Disinfectant Residuals (Chlorine/Chloramines)	ppm	>4 (MRDL)	>4 (MRDLG)	0.9	0.1 - 2.1	No	Water additive used to control microbes
DISINFECTION BY-PRODUCTS							
Total Trihalomethanes (4)	ppb	80	N/A	51	6 - 64	No	By-product of drinking water disinfection
Total Haloacetic Acids (4)	ppb	60	N/A	33	2 - 37	No	By-product of drinking water disinfection
RADIOLOGICAL (5)							
Beta & Photon emitters (6)	pCi/l	50	0	1.6	N/A	No	Decay of natural and man-made deposits
Alpha emitters (7)	pCi/l	15	0	5	ND - 5	No	Erosion of natural deposits
Uranium	ppb	30	0	14	2 - 14	No	Erosion of natural deposits
Additional Monitoring	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Detected	Range	MCL Violation Yes/No	Major Sources in Drinking Water
Additional contaminants for which we monitor that are currently not regulated by the EPA							
PFOA (8)	ppt	CNR	N/A	27	ND - 27	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFBS (8)	ppt	CNR	N/A	5	ND - 5	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFOS (8)	ppt	CNR	N/A	13	ND - 13	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFHxA (8)	ppt	CNR	N/A	8	ND - 8	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFHxS (8)	ppt	CNR	N/A	8	ND - 8	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
PFHepA (8)	ppt	CNR	N/A	6	ND - 6	N/A	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
Perchlorate	ppb	CNR	N/A	1.6	0.1 - 1.6	N/A	Oxygen additive in solid fuel propellant for rockets
Chlorate	ppb	CNR	N/A	262	ND - 262	N/A	Agricultural defoliant; used in production of chlorine dioxide
Chromium-6	ppb	CNR	N/A	0.56	0.06 - 0.56	N/A	Naturally-occurring element; used in making steel and other alloys. Also used for chrome plating, dyes and pigments, leather tanning and wood preservation
1,4 dioxane	ppb	CNR	N/A	4.4	ND - 4.4	N/A	Solvent or solvent stabilizer in manufacture of paper, cotton, textile products, auto coolant, cosmetics and shampoos
UCMR4 (Unregulated Contaminant Monitoring Rule) (9)							
Germanium	ppb	CNR	N/A	0.7	ND - 0.7	N/A	Naturally-occurring element; commercially available in combination with other elements and minerals; a byproduct of zinc ore processing; used in infrared optics, fiber-optic systems, electronics and solar applications
Manganese	ppb	CNR	N/A	29	ND - 29	N/A	Naturally-occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient
Haloacetic Acids (HAA6Br)	ppb	CNR	N/A	12	2 - 12	N/A	By-product of drinking water disinfection
Haloacetic Acids (HAA9)	ppb	CNR	N/A	49	2 - 49	N/A	By-product of drinking water disinfection

Secondary Standards (Non-Health Related)				
Parameter	Units	RUL*	Results	
			Average	Range
Sodium	ppm	50	30	28 - 32
Alkalinity	ppm	N/A	63	30 - 180
Chlorides	ppm	250	65	48 - 82
Color	Color Units	10	2	2 - 5
Hardness	ppm	250	156	28 - 322
Sulfates	ppm	250	34	14 - 54
Odor	Threshold Odor Number	3	4	N/A
pH	N/A	6.5 - 8.5 (optimum range)	7.8	6.8 - 8.5
Total Dissolved Solids	ppm	500	317	179 - 454
Zinc	ppm	5	0.3	0.01 - 0.57
Aluminum	ppm	0.2	ND	N/A

*RUL: Recommended Upper Limit

- MCLs for these chemicals were set by the NJDEP below those set by the EPA.
- There is no MCL for Nickel but it must be monitored.
- The listed Lead and Copper concentrations are the 90th Percentile Value.
- Compliance is based on Local Running Annual Averages of quarterly samples of individual sites. For example, for the 1st quarter LRAA you use the last 3 quarters of the previous year with the 1st quarter of the current year so the highest quarter LRAA may be greater than the range for the current year.
- The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Various sites are on different monitoring schedules. The results listed are from 2017, 2018 and 2020.

- The MCL for Beta Particles is 4 mrem/yr. EPA considers 50 pCi/l to be the level of concern for Beta Particles.
- The Gross Alpha compliance is determined minus the Radon and Uranium contribution.
- These contaminants are in a group of Perfluorinated compounds widely found in the environment. NJDEP established MCLs for PFOA and PFOA in 2020 with compliance sampling starting in 2021.
- The purpose of the UCMR monitoring is to provide the EPA Administrator with data to support decisions concerning whether or not to regulate these contaminants. Results are from 2019.

Monitoring & Reporting (M&R) Violation	Explanation of the M&R Violation	Length of Violation	Steps Taken to Correct the Violation	Distribution Information
<p>We are 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. From September 15th to September 17th, we did not monitor for pH and orthophosphate at an active interconnection, and therefore cannot be sure of the quality of your drinking water during that time.</p>	<p>Water systems must monitor for water quality parameters (including pH and orthophosphate) at various locations and frequencies. An alternate interconnection was utilized for approximately two days in September. Our laboratory had collected pH and orthophosphate residuals the day before at the usual location. Both locations have the same source water and therefore the same water quality. Sampling at the alternate interconnection was missed.</p> <p>No action is required from the customer and no alternate water supply is required. pH and orthophosphate have no acute (immediate) health effects, however changes in pH or orthophosphate concentration could potentially impact the effectiveness of the corrosion control treatment process thereby impacting the levels of lead and copper.</p> <p>If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from your health care providers about drinking this water.</p> <p>During this time Lead and Copper sampling met the Action Level (AL) of the Lead and Copper Rule. See Water Quality Results Table.</p>	<p>2 days</p>	<p>Consulted with the NJDEP and revised our Water Quality Parameter sampling plan to ensure all locations are sampled at the appropriate time.</p>	<p>Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.</p>