

Annual Drinking Water Quality Report

The North Caldwell Water Department

Report for the Year 2011, Results from the Year 2010

Following is this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day.

The North Caldwell Water Department and our suppliers routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables show the results of that monitoring for the period of January 1st to December 31st, 2010. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants does not change frequently. Some of our data, though representative, are more than one year old.

Our water supply: In 2010 we purchased our water from the Borough of Essex Fells and the Passaic Valley Water Commission. Essex Fells uses sixteen wells which draw groundwater from the Watchung Basalt, Brunswick Shale, and Stratified Glacial Drift. The wells range in depth from 94 to 566 feet and provide the majority of the drinking water throughout the year. During times of peak demand, they sometimes purchase water from the New Jersey American Water Company. Water Quality test results for the North Jersey District Water Supply Commission, the Passaic Valley Water Commission and the New Jersey American Water Company are included in this report. Supply sources are the Passaic River, and the Wanaque and Monksville Reservoir. The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Reports and Summaries for these public water systems, which are available at WWW.state.nj.us/dep/swap or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550. You may also contact your public water system at 973-228-6410.

Vulnerable populations: Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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

North Caldwell Water Department Test Results						
Contaminant	Violati on Y/N	Level Detected	Units of Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic:						
Copper Test results Yr. 2008	N	0.36 No samples exceeded the action level.	Ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead Test results Yr. 2008	N	7.2 1 sample out of 21 exceeded the action level.	Ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Disinfection By-Products						
TTHM Total trihalomethanes Test results Yr. 2010	N	Range = 4 - 57 Average = 20	Ppb	N/A	80	By-product of drinking water disinfection
(HAA5) Total Haloacetic Acids Test results Yr. 2010	N	Range = ND - 5 Average = 2	ppb	N/A	60	By-product of drinking water disinfection

For additional information: If you have any questions about this report or concerning your water utility, please contact Frank Zichelli at 973-228-6410, x107. If you want to learn more, please attend any of our regularly scheduled Borough Council meetings at Borough Hall on Gould Avenue. Meetings are generally held on the second and fourth Tuesday of each month at 7:30 p.m.

Essex Fells Water Utility Test Results						
Contaminant	Violati on Y/N	Level Detected	Units of Measure ment	MC LG	MCL	Likely Source of Contamination
Radioactive Contaminants:						
Gross Alpha Test results Yr. 2006	N	Range = 0.6 - 2 Highest detect = 2	pCi/l	0	15	Erosion of natural deposits
Radium 228 Test results Yr. 2006	N	Range = 0.1 - 0.2 Highest detect = 0.2	pCi/l	0	N/A	Erosion of natural deposits
Radium 226 Test results Yr. 2006	N	Range = 0.2 - 0.4 Highest detect = 0.4	pCi/l	0	N/A	Erosion of natural deposits
Uranium Test results Yr. 2006	N	Range = ND - 1.1 Highest detect = 1.1	Ppb	0	30	Erosion of natural deposits
Inorganic Contaminants:						
Chromium Test results Yr. 2009	N	Range: ND to 3.7 Highest Level = 3.7	Ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Copper Test results Yr. 2009	N	ND No samples exceeded the action level.	Ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits.
Lead Test results Yr. 2009	N	3.8 1 sample out of 10 exceeded the action level.	Ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen) Test results Yr. 2010	N	Range: 1.9 - 2.8 Highest Level = 2.8	Ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Disinfection By-Products / Volatile Organic Contaminants:						
TTHM Total trihalomethanes Test results Yr. 2010	N	Range = 16 - 17 Average = 16	Ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids Test results Yr. 2010	N	Range = 16 - 10 Average = 8	Ppb	N/A	60	By-product of drinking water disinfection

Regulated Disinfectants	Level Detected	MRDL	MRDLG
Chlorine	Average = 0.4	4.0 ppm	4.0 ppm

Definitions:

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

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

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

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

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

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

Million Fibers per Liter (MFL) - million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

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

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

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

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

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

Maximum Residual Disinfectant Goal (MRDLG) -The level of a drinking water disinfectant, below which there is no known or expected risk to health.

MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination

Potential sources of contamination: The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

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

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

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

Lead:

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

Waivers: The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals and synthetic organic chemicals. The systems received monitoring waivers for asbestos and synthetic organic chemicals.

We at the North Caldwell Water Department work hard to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future. Please call our office if you have questions.

New Jersey American Water – Short Hills System Test Results Year 2010						
Contaminant	Violati on Y/N	Level Detected	Units of Measur ement	MCL G	MCL	Likely Source of Contamination
Microbiological Contaminants						
Total Organic Carbon	N	Range = 0.3 – 2.7 Highest detect = 2.7	ppm	n/a	TT	Naturally present in the environment.
Turbidity	N	TT=% of samples <0.3 99%	NTU	n/a	TT	Soil runoff
Inorganic Contaminants:						
Arsenic	N	Range = ND – 3 Highest detect = 3	ppb	n/a	50	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	N	Range = 0.003 – 0.18 Highest detect = 0.18	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	N	Range = ND – 2 Highest detect = 2	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Copper Test results Yr. 2009	N	0.4 No samples exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride	N	Range = ND – 1 Highest detect = 1	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead Test results Yr. 2009	N	4 2 samples exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nickel	N	Range = 2 - 15 Highest detect = 15	ppb	100	100	Erosion of natural deposits
Nitrate (as Nitrogen)	N	Range = 0.1 – 5.6 Highest detect = 5.6	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	N	Range = ND – 4 Highest detect = 4	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Volatile Organic Contaminants / Disinfection Byproducts						
Methyl tertiary butyl ether (MTBE)	N	Range = ND – 0.6 Highest detect = 0.6	ppb	70	70	Leaking underground gasoline and fuel oil tanks. Gasoline and fuel oil spills.
TTHM Total Trihalomethanes	N	Range = ND - 98 Average = 38	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids	N	Range = ND – 70 Average = 34	ppb	N/A	60	By-product of drinking water disinfection
Radioactive Contaminants						
Gross Alpha	N	Range = ND – 12 Average = 4	pCi/l	0	15	Erosion of natural deposits
Combined Radium 228 & 226	N	Range = ND – 2.7 Average = 0.6	pCi/l	0	5	Erosion of natural deposits
Regulated Disinfectants		Level Detected		MRDL		MRDLG
Chlorine		Range = 0.4 – 0.8 Average = 0.6		4.0 ppm		4.0 ppm
Chloramines		Range = 0.6 – 1.1 Average = 0.9		4.0 ppm		4.0 ppm

Unregulated Contaminant Monitoring Rule (UCMR)

During 2008 and 2009, The New Jersey American Water Company participated in the UCMR. Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether regulation is warranted. Our results are available upon request. For testing conducted in the Short Hills System, we found the substance listed.

Contaminant	Level Detected	Units of Measurement	Likely source
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N-nitrosopyrrolidine (NPYR)	Range = ND – 0.002	ppb	Byproduct from manufacturing of rubber, leather and plastics
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The New Jersey American Water Company conducts annual sampling to determine the radon levels in all sources of our water supply. Our water showed radon levels ranging from non-detectable to 1,432 pCi/l in the Short Hills System. The EPA is developing regulations to reduce Radon in drinking water. Radon in the air is inexpensive to test and easy to remediate. For Additional information, call the EPA's Radon Hotline at 1-800-SOS-Radon. Radon is a radioactive gas that occurs naturally in some groundwater

New Jersey American Water – Short Hills System Test Results Year 2010				
Secondary Contaminant	Level Detected	Units of Measurement		RUL
Sodium	Range = 13 - 90	ppm		50
Manganese	Range = ND - 157	ppb	50	

The New Jersey American Water Company – Short Hills System exceeded the Recommended Upper Limit (RUL) for Sodium and Manganese.

Sodium

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

Manganese

The secondary Recommended Upper Limit (RUL) for manganese is based on staining of laundry. Manganese is an essential nutrient, and toxicity is not expected from levels which would be encountered in drinking water.

Recent scientific research shows that certain disease –producing microorganisms are resistant to some disinfectants, Cryptosporidium being one. If ingested, this microbe can cause discomfort to healthy people and serious illness in those who are very young, very old, or whose immune systems are compromised as the result of cancer treatment or disease. Although Cryptosporidium has not been detected in the finished water, we are aware of the potential for contamination from this and other pathogenic organisms.

Passaic Valley Water Commission 2010 Test Results						
Contaminant	Violati on Y/N	Level Detected	Units of Measur ement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Turbidity	N	Highest Measurement = 0.26 Range = 0.14 – 0.26 100% samples < 0.3	NTU	0	TT = % of monthly samples < 0.3 NTU	Soil runoff
Total Organic Carbon (%)	N	60 % (25-45% required) Range = 47 - 78%		NA	TT = % removal	Naturally present in the environment
Inorganic Contaminants:						
Nitrate (as Nitrogen)	N	Range = 0.9 – 2.3 Highest detect = 2.3	Ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Barium	N	Range = 0.009 – 0.028 Highest detect = 0.028	Ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	N	Range = ND - 2 Highest detect = 2	Ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Nitrate (as Nitrogen)	N	Range = 0.54 – 3.63 Highest detect = 3.63	Ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Volatile Organic Contaminants / Disinfection Byproducts						
TTHM Total Trihalomethanes	N	Range = 4 - 19	Ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids	N	Range = 3 – 7	Ppb	N/A	60	By-product of drinking water disinfection
Secondary Contaminant		Level Detected	Units of Measurement		RUL	
Sodium		Range = 23 - 136	Ppm		50	

The Passaic Valley Water Commission (PVWC) exceeded the Recommended Upper Limit for Sodium. For healthy individuals the sodium intake from water is not important, because a much greater of sodium takes place from salt in the diet. However sodium levels above the Recommended Upper Limit (RUL) may be of concern to individuals on a sodium restricted diet.

The PVWC incurred a monthly total Coliform Bacteria MCL violation in July 2010. Public Notification was completed within 30 days as required. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems. Subsequent testing for coliform bacteria was conducted and no additional coliform bacteria were found to be present.

North Jersey District Water Supply Commission (NJDWSC) 2010 Test Results						
Contaminant	Violati on Y/N	Level Detected	Units of Measur ement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Turbidity	N	0.52 Highest Measurement 100 % < 0.3	NTU	0	TT 0.3 NTU % Of the NTU	Soil runoff
Total Organic Carbon (%)	N	40% (35% required) (Range 17 - 45%)		NA	TT = % removal	Naturally present in the environment
Inorganic Contaminants:						
Barium	N	0.009	Ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Arsenic	N	0.28	Ppb	n/a	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Nitrate (as Nitrogen)	N	0.2	Ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Volatile Organic Contaminants / Disinfection Byproducts						
TTHM Total Trihalomethanes	<u>N</u>	Range = 26 - 66	Ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids	<u>N</u>	Range = 13 - 35	Ppb	N/A	60	By-product of drinking water disinfection