

## Substances That Might Be in Drinking Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. 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 these contaminants does not necessarily indicate that the water poses a health risk.

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 can acquire naturally occurring minerals, in some cases, radioactive material; and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and which may also come from gas stations, urban stormwater 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 U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

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WATER BUREAU**

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Perchlorate is an inorganic chemical used in manufacturing rocket fuels and explosives. At high concentrations in drinking water, it can interfere with the ability of the thyroid gland to produce hormones necessary for normal growth and development. Perchlorate was first detected in drinking water wells in northern California in 1997. It was later detected in many water wells elsewhere in the United States. At this time there is no regulation in New Jersey. Only one water production well was found to have this contaminant in its finished water. We will keep you updated on the progress of this issue.



### Perchlorate in the News

MTBE (methyl-*t*-butyl ether) belongs to a group of chemicals commonly known as fuel oxygenates. Oxygenates are added to gasoline to reduce carbon monoxide and ozone levels in the air caused by auto emissions. MTBE contamination of drinking water sources may result from leaking fuel storage tanks, pipelines, refueling spills, consumer disposal of "old" gasoline, emissions from older marine engines, and to a lesser degree, stormwater runoff and precipitation mixed with MTBE in the air. Currently, the primary concern about MTBE in drinking water is that it causes taste and odor problems. There are no data showing significant health risks of MTBE at low-exposure levels in drinking water; however, it is a potential human carcinogen at high doses. In December 1997, the U.S. EPA issued a drinking water advisory stating that it is unlikely that MTBE in drinking water at concentrations of 20 to 40 ppb will cause adverse health effects. Continuing research by the EPA and others is expected to help determine more precisely the potential for adverse health effects from MTBE in drinking water. In an effort to better balance the air-quality benefits and water-quality concerns associated with oxygenates in gasoline, the U.S. EPA now requires reducing or eliminating MTBE as a fuel oxygenate. Also, the agency is considering setting health standards for MTBE and is currently gathering information from utilities across the country on the occurrence of MTBE. For a more complete discussion, visit the U.S. EPA's MTBE Web site at [www.epa.gov/mtbe/faq.htm](http://www.epa.gov/mtbe/faq.htm).

### MTBE in the News



The Township of Montclair obtains its primary supply from the North Jersey District Water Supply Commission (NJDWSC). The Township of Montclair is a partner in the NJDWSC, which owns and operates the 29.6-billion-gallon Wanauque Reservoir and Treatment Plant and the 7-billion-gallon Monksville Reservoir. Montclair pumps its allocation from this source using the Grove Street Pumping Station, which is located on Grove Street at the Clifton town line. Additional water is obtained from three wells within the township: Glenfield Well, Lorraine Well, and Rand Well. The Montclair Water Bureau is responsible for the operation, including the water treatment, of these wells.

The overall quality of water delivered to wholesale and retail consumers of the Montclair system meets all criteria of the New Jersey Department of Environmental Protection (NJDEP) except that the water from NJDWSC is highly corrosive. NJDWSC began adding a sequestering compound to the water from the Wanauque Reservoir during the year 2002. This compound is used to offset the effect of the corrosive water. The Montclair Water Bureau also adds sequestering compounds to the water from the municipal wells so as not to dilute the treatment of the NJDWSC. This keeps the effects of the compounds from being diminished by the additional water supplied by the wells.

Montclair has the following active interconnections, which supply other systems:

- Glen Ridge: Three interconnections to transfer water into Glen Ridge from Montclair.
- Passaic Valley (PV): One interconnection to transfer water to PV Water Supply Commission from Montclair.
- New Jersey American (NJA): Three interconnections to sell water to NJA Water Commission from Montclair.

### Where Does My Water Come From?

Lead is a naturally occurring element in our environment. Consequently, our water supply is expected to contain small, undetectable amounts of lead. However, most of the lead in household water usually comes from the plumbing in your own home, not from the local water supply. The U.S. EPA estimates that more than 40 million U.S. residents use water that can contain lead in excess of the EPA's Action Level of 15 ppb.

Lead in drinking water is a concern because young children, infants and fetuses appear to be particularly vulnerable to lead poisoning. A dose that would have little effect on an adult can have a big effect on a small body. On average, it is estimated that lead in drinking water contributes between 10% and 20% of the total lead exposure in young children.

All kinds of water, however, may have high levels of lead. We maintain our drinking water supply at an optimum pH and mineral content level to help prevent corrosion in your home's pipes. To reduce lead levels in your drinking water you should flush your cold-water pipes by running the water until it becomes as cold as it will get (anywhere from 5 seconds to 2 minutes or longer) and use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead.

For more information, call the Safe Drinking Water Hotline at (800) 426-4791.

### Lead in Drinking Water

For more information about this report, or for any questions relating to your drinking water, you can call (973) 744-4600.

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### Continuing Our Commitment

Once again we proudly present our annual water quality report. This edition covers all testing completed from January through December 2004. We are pleased to tell you that our compliance with all state and federal drinking water laws remains exemplary. As in the past, we are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

## Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

**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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.**

### PRIMARY DRINKING WATER STANDARD<sup>1</sup> (Regulated in order to protect against possible adverse health effects)

SUBSTANCE (UNITS)	YEAR SAMPLED	Montclair Water Bureau				NJDWSC		VIOLATION	TYPICAL SOURCE
		MCL (MRDL)	MCLG (MRDLG)	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Alpha emitters (pCi/L)	2004	15	0	3.69	1.73-3.69	ND	NA	No	Erosion of natural deposits
Barium (ppm)	2004	2	2	0.27	NA	0.0096	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/photon emitters <sup>2</sup> (pCi/L)	2000	50	0	NA	NA	2.3	NA	No	Decay of natural and man-made deposits
Chlorine (ppm)	2004	(4)	(4)	0.66	0.59-0.72	0.975	NA	No	Water additive used to control microbes
Chromium (ppb)	2004	100	100	NA	NA	2.4	NA	No	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride (ppm)	2004	4	4	ND	NA	0.111	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2004	60	NA	38	15.5-59	38.37	27-46.2	No	By-product of drinking water disinfection
Methyl tertiary-Butyl Ether [MTBE] (ppb)	2004	70	70	0.82	ND-1.38	NA	NA	No	Leaking underground gasoline and fuel oil tanks, gasoline and fuel oil spills
Nitrate (ppm)	2004	10	10	2.7	NA	0.15	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (ppm)	2004	1	1	NA	NA	0.086	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Coliforms (% positive samples)	2004	5% positive monthly samples	0	ND	NA	0.78	NA	No	Naturally present in the environment
TTHMs [Total Trihalomethanes] (ppb)	2004	80	NA	60	43.82-96.86	48	31.22-75.31	No	By-product of drinking water disinfection
Turbidity <sup>3</sup> (NTU)	2004	TT	NA	NA	NA	0.23	ND-0.23	No	Soil runoff

Tap water samples were collected for lead and copper analyses from 126 homes throughout the service area

SUBSTANCE (UNITS)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90th% TILE)	HOMES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2004	1.3	1.3	0.072	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2004	15	0	5.2	3	No	Corrosion of household plumbing systems; Erosion of natural deposits

### SECONDARY DRINKING WATER STANDARD (Regulated in order to protect the odor, taste and appearance of drinking water)

SUBSTANCE (UNITS)	YEAR SAMPLED	Montclair Water Bureau				NJDWSC		VIOLATION	TYPICAL SOURCE
		RUL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Hardness (ppm)	2004	250	NA	NA	NA	38.9	NA	No	Naturally occurring
Iron (ppb)	2004	300	NA	NA	NA	15	NA	No	Naturally occurring
Manganese (ppb)	2004	50	NA	NA	NA	12	NA	No	Naturally occurring
Sodium (ppm)	2004	50	NA	28	21-38	17.7	NA	No	Naturally occurring
Sulfate (ppm)	2004	50	NA	19 <sup>4</sup>	8-28 <sup>4</sup>	9.75	NA	No	Naturally occurring

### UNREGULATED SUBSTANCES

SUBSTANCE (UNITS)	YEAR SAMPLED	Montclair Water Bureau		NJDWSC		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
Bromoacetic Acid (ppb)	2004	NA	NA	0.56	ND-0.57	By-product of drinking water disinfection
Bromoform (ppb)	2004	0.41	0.38-1.52	0.58	ND-0.65	By-product of drinking water disinfection
Chloroform (ppb)	2004	47.25	31.1-84.9	38.7	24.52-64.02	By-product of drinking water disinfection
Bromodichloromethane (ppb)	2004	8.73	6.86-10.9	7.9	5.77-10.38	By-product of drinking water disinfection
Dibromoacetic Acid (ppb)	2004	0.44	ND-1.8	1.25	ND-1.4	By-product of drinking water disinfection
Dibromochloromethane (ppb)	2004	0.33	0.24-0.39	0.88	0.56-1.24	By-product of drinking water disinfection
Dichloroacetic Acid (ppb)	2004	11.51	3.2-20.6	14.97	2.96-21.17	By-product of drinking water disinfection
Monochloroacetic Acid (ppb)	2004	2.34	ND-10.2	1.81	ND-2.61	By-product of drinking water disinfection
Perchlorate (ppb)	2004	6.1	ND-6.1	NA	NA	Used in the manufacturing of rocket fuels and explosives
Trichloroacetic Acid (ppb)	2004	18.15	11-25.7	22.52	16.36-28.67	By-product of drinking water disinfection

## Table Definitions

**AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**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.

**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.

**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.

**NA:** Not applicable

**ND:** Not detected

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water.

**pCi/L (picocuries per liter):** A measure of radioactivity.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**RUL (Recommended Upper Limit):** The highest level of a contaminant recommended in drinking water. RULs are set to protect the odor, taste and appearance of drinking water.

**TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

### Footnotes

<sup>1</sup> Under a waiver granted on December 30, 1998, by the State of New Jersey Department of Environmental Protection, our system does not have to monitor for synthetic organic chemicals/pesticides because several years of testing have indicated that these substances do not occur in our source water. The SDWA regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals and synthetic organic chemicals. Our system received monitoring waivers for synthetic organic chemicals and asbestos.

<sup>2</sup> The MCL for beta/photon emitters is written as 4 mrem/year. The EPA considers 50 pCi/L as the level of concern for beta emitters.

<sup>3</sup> Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system. During the reporting year, 100% of all samples taken to measure turbidity met water quality standards.

<sup>4</sup> Sampled in 2003.

