QUALITY REPORT

2015

TRENTON WATER WORKS

The City of Trenton is pleased to present the

Quality drinking water is an essential resource. The good news is your tap water is top quality. Our water meets all federal and state standards.

Your drinking water:

It's high quality.
It's reliable.

And we are continuing to make the necessary investments to keep it that way.

Eric E. Jackson, Mayor
Trenton Water Works

Notice to Landlords
You are required by law to make this report available to all water consumers. Please post in a visible location or distribute to all tenants. Additional copies are available by calling 609-989-3208

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Trenton Water Works
P.O. Box 528
Trenton, NJ 08604-0528

For More Information:

The City of Trenton values our water customers and works hard to ensure their satisfaction

If you have questions or comments,about this report, please contact our Water Quality Office at 609-989-3216 between 8:00 AM and 3:00 PM, or contact the following for more information:

New Jersey Department of Environmental Protection

Bureau of Safe Drinking Water. 609-292-5550 or
www.state.nj.us/dep/watersupply/

Or Drinking Water Watch at:
https://www9.state.nj.us/DEP_WaterWatch_public/index.jsp

United States Environmental Protection Agency

1-800-426-4791 or www.epa.gov/safewater.

Este informe contiene información muy importante sobre su agua beber.

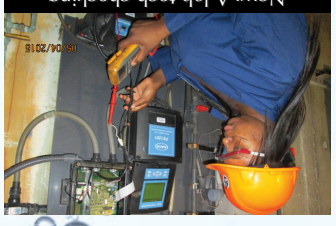
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling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

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.

and analyzes huge amounts of raw data. Trenton Water Works is making a continual effort to stay in compliance with these regulations by seeking consulting services for a project to upgrade the current SCADA system.

The importance of the SCADA system is increasing due to federal and state regulatory requirements. The SCADA system gathers, archives a database that accumulates time-stamped data and records events and alarms which can be queried or used to populate graphic trends.

Now: A lab tech checking calibration on a turbidity meter



The Water Source Used by Trenton Water Works

Trenton Water Works is a public community water system serving approximately 205,000 customers. This system's source water is drawn from Delaware River through an intake north of the Calhoun St. Bridge. The water is treated at the TWW Filtration plant on Route 29 S, and piped to the distribution system.

Trenton Water Works also has arrangements to purchase ground water from adjacent water distribution systems as needed.

Susceptibility Ratings for Trenton Water Works Sources

The table below illustrates the susceptibility ratings for the seven contaminant categories (and radon) for each source in the system. The table provides the number of wells (0) and intakes (1) that rated high (H), medium (M), or low (L) for each contaminant category. For susceptibility ratings of purchased water, refer to the specific water system's source water assessment report.

The eight contaminant categories are defined at the bottom of the opposite page. DEP considered all surface water highly susceptible to pathogens, therefore all intakes received a high rating for the pathogen category.

For the purpose of Source Water Assessment Program, radionuclides are more of a concern for ground water than surface water. As a result, surface water intakes' susceptibility to radionuclides was not determined and they all received a low rating.

If a system is rated highly susceptible for a contaminant category, it does not mean a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination.

Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, DEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

Source Water Assessment for Trenton Water Works

	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radio-nuclides			Radon			Disinfection Byproduct Precursors		
Sources	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Wells - 0																								
GUDI - 0																								
Surface water intakes - 1	1			1				1			1		1				1				1	1		

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

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

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

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

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

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

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

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

The assessment of the source water determined the following:

The susceptibility of the Delaware River to eight contaminant catagories was evaluated. The Delaware River received a high susceptibility rating for pathogens, nutrients, inorganics, and disinfection byproducts (DBP's): a medium susceptibility rating for pesticides and volatile compounds (VOCs); and a low susceptibility rating for radionuclides and radon. All surface water sources in New Jersey are considered to be highly susceptibile to pathogens and have a low susceptibility to radionuclides and radon.

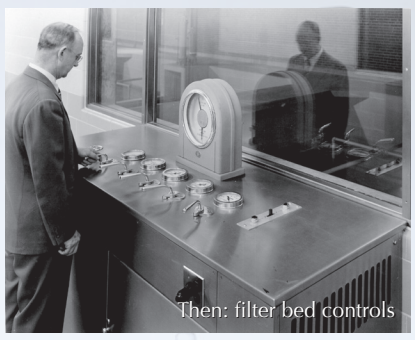
The NJDEP found the following potential contaminant sources within the source water assessment area for the systems source:

- Agriculture, residential , urban, and commercial and industrial land use.
- Sewer treatment plants
- Solid Waste landfills, solid waste resource recovery facilities, solid waste transfer facilities, compost facilities, Class B recycling facilities
- NJPDES permitted Facilities
- Underground storage tanks.

Trenton Water Works also has access to purchased groundwater as an emergency water source from an adjacent water system. For further source water information, contact NJDEP Drinking Water Watch.

The History of Water Treatment Monitoring Technology

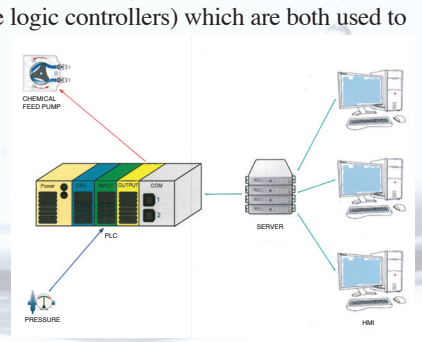
Then and Now


Then: filter bed controls

The original Trenton Water Treatment Plant was designed in the early 1900s. Monitoring the treatment plant through process control was limited during these times. Operations staff used basic on/off switches to operate pumps, classic designs of flow and pressure meters and chart recorders for recording data. The original pumping station which was located downriver of the Calhoun Street bridge was operated using steam engines.

Process control and instrumentation has advanced tremendously over the years. Some of the current technologies used are: VFDs (variable frequency drives) which is a type of adjustable-speed drive used for electric motors; various types of flow meters such as magnetic (measures the flow rate based on voltage created between two electrodes as the water passes through an electromagnetic field), ultrasonic (sends a beam of ultrasonic sound waves through the water) and positive-displacement meters (measures exact quantity of water passing through them) and online analyzers used to measure turbidity, chlorine, pH, particle counts and head loss.

One of the newer control systems in the plant is the SCADA (supervisory control and data acquisition) system. It is a system operating with coded signals over communication channels to provide control of remote equipment and to acquire data about the status of the equipment for display or for recording functions. The SCADA system consists of some of the following components: RTUs (remote terminal units) and PLCs (programmable logic controllers) which are both used to connect to sensors in the process and convert sensor signals to digital data, HMI (human-machine interface) which presents processed data to a human operator and Historian which is



Acronyms and Definitions

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

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

Secondary Maximum Contaminant Level (SMCL): Any contaminant in drinking water which may adversely affect the taste, color, odor, or appearance of such water, or which may adversely affect the public welfare.

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

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

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

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

Variances and Exceptions: State or EPA permission not to meet a MCL or a treatment technique under certain conditions.

ppm: Concentration in parts per million or milligrams per liter (mg/L); this is equivalent to $0.01 of $10,000.

ppb: Concentration in parts per billion or micrograms per liter (µg/L); this is equivalent to $0.01 of $10,000,000.

pCi/L: Picocuries per liter; a measure of radioactivity.

NLE: No Level Established

NTU: Nephelometric turbidity units (units describing how cloudy a water sample appears).

MFL: million fibers per liter.

>: Greater than; when seen in the table, it usually refers to detectable levels.

<: When seen in the table, it usually refers to below detectable levels.

≤: Less than or equal to; when seen in the table, it usually refers to below or equal to detectable levels.

Contaminant: Anything found in water (including microorganisms, minerals, chemicals, radionuclides, etc.) that may be harmful to human health.

Raw Water: Water in its natural state prior to any treatment for drinking.

Source Water: Water in its natural state originating from the watershed that supplies a water system with its raw water.

Watershed: The land area from which water drains into a stream, river, or reservoir.

Treated Water: Water to be used by a public water system that has received the application of approved water treatment chemicals.

Drinking Water: Water that has been treated to comply with EPA regulations and is pumped to the water customer for use.

Turbidity: Turbidity is a measure of the cloudiness of the water, which is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

FOOTNOTES

1. TWW averages 151 samples per month. The requirement is 120 samples monthly. An MCL violation would be triggered if , > 5% of the samples had TC detected or any detection of E-coli.
2. Trenton Water Works was granted a reduction in sampling frequency in accordance with 40 CFR 141.86(d)(4). A minimum of 50 first draw (sampled before any other water is run) lead and copper samples are collected every three years as required. Data presented is from 52 samples collected and analyzed in 2014. The next sampling will take place in 2017.
3. Stage 2 DBPR monitoring began April 1, 2012. Data presented was sampled quarterly in 2014.
4. The highest Locational Running Annual Average (LRAA) for TTHM and HAA5 is reported per regulation. All LRAAs which exceed the MCL shall be included. A LRAA is the average of the current and three previous quarterly results for each sample site location.
5. Data presented is derived from quarterly sample site results.
6. Turbidity is a measure of the cloudiness of the water. 99.3% of the turbidity readings in 2014 were below the treatment technique requirement of 0.3 NTU. 206 samples of 289,465 were > 0.3 ntu.
7. Chlorine residuals are taken during Coliform (bacteria) sampling in the distribution system.
8. Sampling is required every 9 years .The current compliance period is 2011-2019. Only detected results are reported.
9. Inoganic compounds were tested in August of 2014.
10. NJDEP standards.
11. Unregulated Contaminant Rule sampling assesses the potential risks associated with certain contaminants. The EPA will use this to determine if regulation is warranted.

Other Notes:

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

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. Trenton Water Works 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 www.epa.gov/safewater/lead.

Drinking Water Quality Results

BACTERIA[1]

	2014 Positive Bacteria Results	MCL	MCLG	Violation (Y/N)	Potential Source
Total Coliform (TC)	2 positive samples out of 1,820 (0.11%)	Presence of coliform bacteria > 5% of monthly samples.	0	N	Naturally present in the environment; their presence indicates potential contamination
Fecal Coliform and E. Coli (EC)	0	A routine sample and repeat sample if total coliform positive, and if one fecal or E. coli positive	0	N	Animal or Human Fecal Waste

METALS

Lead and Copper Rule [2]	Units	2014 Samples Exceeding Action Level	90% of samples were less than or equal to in 2014	MCL	MCLG	Violation (Y/N)	Potential Source
Lead (1st Draw)	ppb	3 out of 52	12	15 (90% Action Limit)	0	N	Corrosion of household plumbing
Copper (1st Draw)	ppm	0 out of 52	< 0.05	1.3 (90% Action Limit)	1.3	N	Corrosion of household plumbing

DISINFECTANT BYPRODUCTS (DBP) – STAGE 2 [3]

Sampling Sites (8 Sites)	Units	2014 Highest LRAA[4]	2014 Range of Values[5]	MCL (Annual Average)	MCLG	Violation (Y/N)	Potential Source
Total Trihalomethanes (TTHM)							
TTHM's	ppb	57.43	26.50 - 61.90	80	N/A	N	Disinfectant Byproducts
Haloacetic Acids (HAA5)							
HAA5's	ppb	28.21	1.13 - 42.30	60	N/A	N	Disinfectant Byproducts

CLARITY CHARACTERISTICS – TESTED AT WATER TREATMENT PLANT [6]

	Units	MCL	MCLG	2014 Highest Reported Level	2014 Range of Values	2014 Average Value	Violation (Y/N)	Potential Source
Turbidity	NTU	TT = 1 NTU 95% of monthly samples must be at or below 0.3 NTU	0	0.56 ntu	N/A	0.062 ntu 99.3 %	N	Soil runoff; river sediment

TOTAL CHLORINE RESIDUAL[7]

	Units	MRDL	MRDLG	2014 Annual Average	2014 Highest Result	Violation (Y/N)	Potential Source
Chlorine Residual	ppm	4	4	0.76	0.81	N	Chemical added to control microbes

RADIOACTIVE CONTAMINANTS IN TAP WATER[8]

	Units	2014 Highest Result	2014 Range of Values	MCL	MCLG	Violation (Y/N)	Potential Source
Alpha Emitters	pCi/L	2.0	N/A	15	0	N	Erosion of natural deposits
Combined Radium	pCi/L	0.05	N/A	5	0	N	Erosion of natural deposits

INORGANIC COMPOUNDS

	Units	2014 Constituent Level	MCL	MCLG	Violation (Y/N)	Potential Source
Asbestos	MFL	<0.09	7	7	N	Decay of asbestos cement water mains; erosion of natural deposits
Barium	ppm	0.4	2	2	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chloride[10]	ppm	41	250 (SMCL)	NLE	N	Naturally present in the environment and road salt.
Chromium	ppb	1	100	100	N	Discharge from steel and pulp mills; erosion of natural deposits
Hardness[10]	ppm	97	250 (SMCL)	NLE	N	Naturally Occurring
Mercury	mg/L	0.000099	0.002	0.002	N	Erosion of natural deposits; discharge from refineries & factories; runoff of landfills & cropland
Nickel	ppb	0.9	100	100	N	Erosion of natural deposits; found in the earth's crust
Nitrate (as Nitrogen)	ppm	0.9	10	10	N	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits
Sodium[10]	ppm	16	50	NLE	N	Naturally Occurring
Sulfate[10]	ppm	14	250	NLE	N	Naturally Occurring

UCMR3 SUBSTANCES: Unregulated Compounds [11]

	Units	MCL	MCLG	Average Level Detected	Range of Values
Chlorate	ppb	NLE	NLE	87	N/A
Chromium	ppb	NLE	NLE	0.5	0.4 – 0.6
Hexavalent Chromium	ppb	NLE	NLE	0.3	0.2 – 0.4
Strontium	ppb	NLE	NLE	82	68 - 96

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 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.