



2018 Annual

Water Quality Report

Logan System

PWS ID: NJ0809002



NEW JERSEY
AMERICAN WATER

A Message from President of New Jersey American

To Our Valued Customer:

New Jersey American Water is proud to be your local water service provider, and I am pleased to share some very good news about the quality of your drinking water. As you read through our Annual Water Quality Report, you will see that we continue to supply water that meets or surpasses all state and federal water quality standards. Better yet, the price you pay for this high-quality water service remains a great value as one of the lowest household utility bills.

New Jersey American Water has experienced professionals, the right technologies in use, and a demonstrated commitment to replacing and upgrading our infrastructure so that you can be assured that your drinking water is of the highest standards.

Please take the time to review this report. It provides details about the source and quality of your drinking water using the data from water quality testing conducted for your local system between January and December 2017.

Sincerely

Robert MacLean

President, New Jersey American Water

Sr. VP, Eastern Division, American Water

About New Jersey American Water

New Jersey American Water, a subsidiary of American Water (NYSE: AWK), is the largest investor-owned water utility in the state, providing high-quality and reliable water and/or wastewater services to approximately 2.7 million people.

About American Water

With a history dating back to 1886, American Water is the largest and most geographically diverse U.S. publicly-traded water and wastewater utility company. The company employs more than 6,700 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to an estimated 15 million people in 47 states and Ontario, Canada. More information can be found by visiting www.amwater.com.



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Share This Report:

Landlords, businesses, schools, hospitals and other groups are encouraged to share this important water quality information with water users at their location who are not customers. Additional copies of this report are available by contacting customer service at 1-800-272-1325. This report contains important information about your drinking water. If you do not understand it, please have someone translate it for you.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

本报告与您的饮用水有关。

如果您不了解其内容，应请别人为您翻译解说。

이 보고서에는 귀하께서 사용하고 계시는 식수에 관한 정보가 들어있습니다. 만약에 이해를 못하시면 누군가에게 번역을 의뢰하십시오.

Water Information Sources

- **New Jersey Department of Environmental Protection**
Bureau of Safe Drinking Water: (609) 292-5550
www.state.nj.us/dep
- **New Jersey Board of Public Utilities:** (973) 648-2350
Two Gateway Center, Newark, NJ 07102
Division of Customer Relations: 1-800-624-0241
www.state.nj.us/bpu
- **US Environmental Protection Agency:** www.epa.gov/safewater
Safe Drinking Water Hotline: 1-800-426-4791
- **American Water Works Association:** www.awwa.org
- **Centers for Disease Control and Prevention:** www.cdc.gov Public Participation

Public Participation

How You Can Get Involved Customers can participate in decisions that may affect the quality of water by:

- Reading the information provided in bill inserts and special mailings
- Contacting the company directly with questions or to discuss issues
- Responding to company requests for participation in focus groups and roundtables
- Attending open houses conducted by the company
- Responding to survey requests

Our Commitment to Quality

Once again, we proudly present our annual water quality report, which details the results of water quality testing completed from January to December, 2017. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Included in this report are details about where your water comes from, what it contains, and how our water quality results compare to federal and state standards.

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 our water users. We want you to be informed about your drinking water.

How to Contact Us

Thank you... for allowing us to continue to provide you with quality drinking water this year. We ask that all our customers protect our water sources. Please call our Customer Call Center toll-free at 1-800-272-1325 if you have questions.

New Jersey American Water
131 Woodcrest Road, P.O. Box 5079, Cherry Hill, NJ 08034



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Protecting Your Water Sources

Protection of our drinking water sources is a shared responsibility with shared benefits. Please do your part. Here's how:

- ✓ Pesticides and fertilizers can contain hazardous chemicals that persist in the environment and may reach drinking water sources. Minimize their use and opt for green alternative solutions.
- ✓ Dispose of chemicals properly; take used motor oil to a recycling center. Many communities offer hazardous waste drop-off locations for residents
- ✓ Clean up after your pets
- ✓ Volunteer in your community with a watershed or wellhead protection organization. Use EPA's *Adopt your Watershed* to locate local groups. If you can't find one, consider starting one! Visit the Watershed Information Network's *How to Start a Watershed Team*.
- ✓ Work with your local government to remind residents that storm drains discharge directly into local water bodies by stenciling next to street drains "Dump No Waste – Drains to River" or "Protect Our Water."

Be Water Wise: Every Drop Counts!

Do your part to prevent drought emergencies through conservation. Please protect and preserve our natural water resources.

Conservation Tips for Outside Your Home

- Utilize native plants that require less water
- Select drought-tolerant grass varieties, such as fine-leaf fescues
- Water only when needed to supplement rainfall; most NJ landscapes need only 1 inch of water weekly
- Harvest water from rain barrels connected to downspouts
- Use 30-50% less water with drip irrigation and micro-sprays compared to sprinklers
- Water the root zone instead of the foliage
- Water deeply and less frequently to encourage deeper, healthier roots
- Water plants in the early morning or evening to reduce evaporation
- Don't over fertilize lawns
- Maintain lawn height at 3 inches or higher to promote deeper roots that retain water better
- Don't over fertilize lawns

Be Water Wise! Conservation Tips for Inside Your Home

- Do not allow faucets to run while brushing your teeth, shaving, doing dishes, etc.
- Repair leaks: One drop every 2 seconds wastes 2 gallons per day
- Utilize low flow toilets, and install water saving devices on shower heads and faucets
- Replace wasteful appliances with high efficiency units
- Run only full washer and dishwasher loads
- Store drinking water in the refrigerator instead of running tap to get it cold
- Wash fruits and vegetables in a basin rather than under running water
- Defrost frozen foods in refrigerator, not under running water
- Compost food wastes instead of using a garbage disposal

More Water Wise Advice

- Commercial car washes use less water and recycle
- If you have a pool, invest in a water-saving filter and cover when not in use to minimize evaporation



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What is S.W.A.P.?

SWAP (Source Water Assessment Program) is a program of the New Jersey Department of Environmental Protection (NJDEP) to study existing and potential threats to the quality of public drinking water sources throughout the state. Sources are rated depending upon their contaminant susceptibility.

Susceptibility Ratings for New Jersey American Water – Logan System

The table below illustrates the susceptibility ratings for seven contaminant categories (and radon) for each source in the system. The table provides the number of wells and intakes 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. Source Water Assessment Reports and Summaries are available for public water systems at www.state.nj.us/dep/swap/ or by contacting the NJDEP's Bureau of Safe Drinking Water at (609) 292-5550.

NJAW - Logan	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radionuclides			Radon			Disinfection Byproduct Precursors		
	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 - 5	1		4	5				2	3	2		3		2	3	5			1	4		3	2	
GUID - 0																								
Surface water intakes - 0																								

Contaminant Categories

DEP considered all surface water highly susceptible to pathogens, therefore all intakes received a high rating for the pathogen category. For the purpose of the 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 a low rating was assigned. 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, NJDEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

Source water protection is a long-term dedication to clean and safe drinking water. It is more cost effective to prevent contamination than to address contamination after the fact. Every member of the community has an important role in source water protection. NJDEP recommends controlling activities and development around drinking water sources whether it is through land acquisition, conservation easements or hazardous waste collection programs. We will continue to keep you informed of SWAP's progress and developments.

Susceptibility Chart Definitions

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, those 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.html> or call (800) 648-0394.

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



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Where Your Water Comes From

New Jersey American Water - Logan System is a public community water system consisting of 5 wells and 1 surface water interconnection. This system's source water comes from the middle Potomac-Raritan-Magothy aquifer, and the lower Potomac-Raritan-Magothy aquifer and the Delaware River.

What's in the Source Water Before We Treat It?

In general, the sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activities. Industrial processes and petroleum production, and may also come from gas stations, urban storm water runoff and septic systems.

Substances That May Be Present in Source Water Include:

Microbiological 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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

Pesticides and Herbicides: 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 by-products of industrial processes and petroleum production, and may also come from gas stations, urban 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.

Do I Need to Take Special Precautions?

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 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 at 1-800-426-4791.

Water Quality Statement

The data presented in the Table of Detected Contaminants is the same data collected to comply with U.S. Environmental Protection Agency and New Jersey state monitoring and testing requirements. 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. To assure high quality water, individual water samples are taken each year for chemical, physical and microbiological tests. Testing is conducted on water collected at the source, during treatment, from the distribution system after treatment and, for lead and copper monitoring, from customers' taps. Testing can pinpoint a potential problem so that preventative action may be taken. The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals, and synthetic organic chemicals. Our systems have received monitoring waivers for synthetic organic chemicals and asbestos.



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How Do I Read the Table of Detected Contaminants?

First, determine which table you should read by finding your town in the Towns Served by this System. Starting with the **Contaminant**, read across from left to right. A “**Yes**” under **Compliance Achieved** means the amount of the substance met government requirements. The column marked **MCLG, Maximum Contaminant Level Goal**, 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. The shaded column marked **MCL, Maximum Contaminant Level**, 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. The column marked **Highest Level Detected** shows the highest test results during the year. The column marked **Range Detected** shows the highest and lowest test results for the year. **Typical Source** shows where this substance usually originates. Compare the detected values with the MCL column. To be in compliance, the Highest Level Detected must be lower than the MCL standard. Those substances not listed in the table were not found in the treated water supply. The footnotes and the definitions below will help you interpret the data presented in the Table of Detected Contaminants.

Table Definitions

90th Percentile Value: Of the samples taken, 90% of the values of the results were below the level indicated in the table.

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

MRDL (Maximum Residual Disinfectant Level): The highest level of 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 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

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

ND (Not Detected): Laboratory analysis indicates that the constituent is not present

ppb (parts per billion): Corresponds to one part substance in one billion parts of water.

ppm (parts per million): Corresponds to one part substance in one million parts of water.

pCi/L (Picocuries per Liter): A measure of the radioactivity in water.

RUL: Recommended Upper Limit

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

Vulnerable Populations Statement

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 pathogens are available from the Safe Drinking Water Hotline at 1-800-426-4791.



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Logan System PWSID NJ 0809002

2017 Data Table of Detected Contaminants

Towns Served by this System: Logan in part, Woolwich in part, Swedesboro, Pedricktown, in part, Bridgeport in part

Regulated contaminants not listed in this table were not found in the treated water supply.

In addition to local ground water, Logan System receives treated surface water from the Delaware River Regional Water Treatment Plant. 2017 data is presented below.

Regulated Substances

Contaminant	Units	Compliance Achieved	MCLG	MCL	Highest Level Detected	Range Detected	Typical Source
Inorganics							
Beryllium (2015) ¹	ppb	Yes	4	4	0.5	ND to 0.5	Discharge from metal refineries and coal burning factories; Discharge from electrical, aerospace, and defense industries
Nickel (2015) ¹	ppb	Yes	NA ²	NA ²	16	ND to 16	Erosion of natural deposits
Nitrate	ppm	Yes	10	10	3.36	ND to 3.36	Runoff from fertilizer use; industrial or domestic wastewater discharges; erosion of natural deposits
Treatment Byproducts							
Five Haloacetic Acids [HAA ₅] Stage 2	ppb	Yes	NA	60	36.8 ³	7.3 to 36.8	By-product of drinking water disinfection
Total Trihalomethanes [TTHM] Stage 2	ppb	Yes	NA	80	60.2 ³	15.0 to 60.2	By-product of drinking water disinfection
Disinfectants							
Chlorine	ppm	Yes	MRDLG = 4	MRDL = 4	0.53 ⁴	0.01 to 0.87	Water additive used to control microbes
Radiologicals							
Alpha Emitters (2015) ¹	pCi/L	Yes	0	15	6.99	ND to 6.99	Erosion of natural deposits
Combined Radium (226/228) (2015) ¹	pCi/L	Yes	0	5	3.89	ND to 3.89	Erosion of natural deposits
Lead and Copper Monitoring Program - Tap water samples were collected from 20 homes in the service area							
Lead & Copper Monitoring	Units	Compliance Achieved	MCLG	Action Level	90th Percentile	Homes Above Action Level	Typical Source
Copper (2015) ¹	ppm	Yes	1.3	1.3	0.331	0	Corrosion of household plumbing systems
Lead (2015) ¹	ppb	Yes	0	15	1	1	Corrosion of household plumbing systems
Footnotes							
¹ The State of New Jersey allows us to monitor for certain contaminants less than once a year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative, are more than one year old.							
² Nickel monitoring is required. Currently there is no established MCL or MCLG							
³ Data represents the highest locational running annual average calculated quarterly							
⁴ Data represents the highest running annual average calculated quarterly							



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Delaware River Regional Water Treatment Plant	2017 Data Table of Detected Contaminants
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Regulated Substances							
Parameter	Units	Compliance Achieved?	MCLG	MCL	Highest Compliance Result	Range Detected	Typical Source
Inorganics							
Nitrate	ppm	Yes	10	10	1.26	NA	Runoff from fertilizer use; industrial or domestic wastewater discharges; erosion of natural deposits
Turbidity							
Turbidity ¹	NTU	Yes	NA	TT = 1 NTU	0.09	0.01 to 0.09	Soil runoff
	%			TT = % of samples <0.3 NTU	100% ¹	NA	
Treatment Byproducts Precursor Removal							
Total Organic Carbon (TOC)	%	Yes	NA	TT ≥35% Removal	45% ²	45% to 66%	Naturally present in the environment.
Ratio of Actual / Required TOC Removal	Ratio	Yes	NA	TT: Running Annual Average ≥ 1.0	1.3 ²	1.30 to 1.88	
Disinfectants							
Chlorine	ppm	Yes	NA	TT = ≥ 0.20	0.47 ³	0.47 to 0.93	Water additive used to control microbes
		Yes	MRDLG = 4	MRDL = 4	0.93 ³		
Disinfection Byproducts							
Bromate	ppb	Yes	0	10	5	5	By-product of drinking water disinfection
Footnotes							
¹ 100% of the turbidity readings were below the treatment technique requirement of 0.3 NTU. Turbidity is a measure of the cloudiness of the water. We monitor turbidity because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants. ² Data represents the lowest removal of Total Organic Carbon (TOC) ³ Data represents the lowest and highest chlorine residuals entering the distribution system from our surface water treatment plant							

Unregulated Contaminants Monitoring Rule (UCMR3)

During 2013-2014, large systems operated by New Jersey American Water participated in the third phase of the Unregulated Contaminant Monitoring Rule (UCMR3). Unregulated contaminants are those for which the EPA has not established drinking water standards. Monitoring assists the EPA in determining the occurrence of these compounds and whether or not regulation is warranted. The Delaware River plant conducted Assessment Monitoring (List 1) and Screening Surveys (List 2). Detections are summarized in the following table, along with typical sources.

For general information on UCMR3, visit <http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3> or contact EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Unregulated Contaminants Monitoring (UCMR3) 2013 - 2014				
Parameter	Units	Highest Locational Average	Range Detected	Typical Source
Hexavalent Chromium	ppb	1.0	0.65 to 1.22	Naturally-occurring element; used in making steel and other alloys; chromium -3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Total Chromium ‡	ppb	1.3	0.8 to 1.8	Naturally - occurring element; used in making steel and other alloys; chromium -3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning and wood preservation
‡ Total Chromium in drinking water is regulated. The MCL is 100 ppb. However, total chromium was not detected during our 2016 compliance monitoring.				
Molybdenum	ppb	1.4	1.2 to 1.7	Naturally-occurring elemental found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent
Strontium	ppb	79	74.3 to 90.2	Naturally-occurring element; historically commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions



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What is Radon?

Radon is a radioactive gas that occurs naturally in some groundwater. It may pose a health risk when the gas is released from water into air, as occurs while showering, washing dishes and performing other household activities. Radon can move up through the ground and into a home through cracks in the foundation. Compared to radon entering the home through soil, radon entering through tap water is, in most cases, a small source of radon in indoor air. Inhalation of radon gas has been linked to lung cancer, however the effects of radon ingested in drinking water are not yet clear. If you are concerned about radon in your home, tests are available to determine the total exposure level. The EPA is developing regulations to reduce radon in drinking water. Radon in the air is inexpensive to test and easy to correct. For additional information call EPA's Radon Hotline at 1-800-SOS-RADON.

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. New Jersey American 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>.

Cryptosporidium

Cryptosporidium is a protozoan found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, people with severely weakened immune systems have a risk of developing a life threatening illness. We encourage such people to consult their doctors regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease. It can also be spread through means other than drinking water.

The U.S. EPA issued a rule in January 2006 that requires systems with higher *Cryptosporidium* levels in their source water to provide additional treatment. To comply with this rule, New Jersey American Water conducted 24 consecutive months of monitoring for *Cryptosporidium* in our raw water sources from 2015 to 2017. We detected the organism in the Delaware River during this testing, but samples were collected prior to treatment. The results of our *Cryptosporidium* monitoring indicates that no additional treatment is required to comply with the U.S. EPA regulation. For additional information regarding cryptosporidiosis and how it may impact those with weakened immune systems, please contact your personal health care provider.

Partnership for Safe Water

The Delaware River Regional Water Treatment Plant participates in the Partnership for Safe Water, receiving Director's Award recognition again in 2017. In 2015, our treatment facilities were awarded the prestigious "Fifteen Year Director's Award" under the Partnership for Safe Water program administered by the U.S. EPA, New Jersey Department of Environmental Protection, and other water related organizations. The award honors water utilities for achieving operational excellence, by voluntarily optimizing their treatment facility operations and adopting more stringent performance goals than those required by federal and state drinking water standards. We are proud to report that we continue to maintain those quality standards.



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