



2018 Annual

# Water Quality Report

Picatinny Arsenal  
PWS ID: NJ1435003



AMERICAN WATER  
Military Services

This report contains important information about your drinking water. If you do not understand it, please have someone explain or translate it for you.

Este informe contiene información muy importante sobre su agua potable. Si no lo comprende, favor acudir a alguien que se lo pueda traducir o explicar.

## Continuing Our Commitment

### A Message From Military Services Group President Mark McDonough

American Water's Military Services Group owns and operates water and wastewater utilities under the Utilities Privatization program and proudly provides water and wastewater services to military communities around the country, including yours. Our Company's Vision – "We Keep Life Flowing" drives everything we do for you, our product consumer. To reinforce our vision and maintain your trust, it's important that we share with you information about our commitment to providing high-quality water service.

I am pleased to provide you with the 2018 Annual Water Quality Report with detailed information about the source and quality of your drinking water. We have prepared this report using the data from water quality testing conducted for your local water system from January through December 2018. You'll find that we supply water that surpasses or meets all federal and state water quality regulations.

With equal importance, we place a strong focus on acting as stewards of our environment. In all of the communities we serve, we work closely with the local directorates of public works, civil engineering squadrons, local environmental departments and state regulatory agencies to protect environmental quality, educate customers on how to use water wisely, and ensure the high quality of your drinking water every day.

At American Water, our values – safety, trust, environmental leadership, teamwork, and high performance – result in more than making water available "on-demand". We deliver more than just water. We deliver a key resource for public health, fire protection, the economy and the overall quality of life we enjoy – We Keep Life Flowing. For more information or for additional copies of this report, visit us online at [www.amwater.com](http://www.amwater.com).

Sincerely,

Mark McDonough

President – American Water's Military Services Group

## What is a Water Quality Report?

To comply with the New Jersey Department of Environmental Protection (NJDEP) and the U.S. Environmental Protection Agency (EPA) regulations, American Water issues a report annually describing the quality of your drinking water. The purpose of this report is to provide you an overview of last year's (2018) drinking water quality. It includes details about where your water comes from and what it contains. We hope the report will raise your understanding of drinking water issues and awareness of the need to protect your drinking water sources.

## Public Participation

Public input concerning water quality is always welcome. Water quality suggestions may be forwarded directly to the following:

Mail: American Water O&M – Picatinny Arsenal  
1390 Farley Avenue  
Picatinny Arsenal, N.J. 07806  
Phone: (862) 397-5990

## Share This Report

Businesses, schools, hospitals and other groups are encouraged to share this important information with water users at their location who may not receive this report directly.

## Water Information Sources

The Military Services Group of American Water provides water and wastewater contract services to military installations across the country as part of the federal government's Utility Privatization Program. It operates and maintains the water and/or wastewater assets at Fort A.P. Hill, VA., Fort Sill, OK., Fort Leavenworth, KS., Scott Air Force Base, Ill., Fort Rucker, AL., Fort Meade, MD., Fort Belvoir, VA., Fort Hood, TX, Fort Polk, LA., Picatinny Arsenal, NJ., Hill Air Force Base, UT and Vandenberg Air Force Base, CA., Wright-Patterson Air Force Base, OH and Fort Leonard Wood, MO.

American Water O&M LLC – Picatinny Arsenal provides water service to approximately 6,190 customers at Picatinny Arsenal, NJ. 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 7,100 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to an estimated 14 million people in 46 states and Ontario, Canada. American Water provides safe, clean, affordable and reliable water services to our customers to make sure we keep their lives flowing. For more information visit [amwater.com](http://amwater.com) and follow American Water on Twitter, Facebook and LinkedIn.

The web sites of US EPA Office of Water, the Centers for Disease Control and Prevention and New Jersey Department of Environmental Protection Division of Water Supply, provide a substantial amount of information on many issues relating to water resources, water conservation and public health. You may visit these sites as well as American Water's website at the following addresses:

### Centers for Disease Control and Prevention

<http://www.cdc.gov>

### United States Environmental Protection Agency

<http://www.epa.gov/safewater>

### New Jersey Department of Environmental Protection Division of Water Supply and Geoscience

<http://www.nj.gov/dep/watersupply>

### American Water

<http://www.amwater.com>

### American Water Works Association

<http://www.awwa.org>

EPA Safe Drinking Water Hotline: (800) 426-4791

## Water Conservation Tips

### Conservation measures you can use inside your home include:

- Fix leaking faucets, pipes, toilets, etc.
- Replace old fixtures; install water-saving devices in faucets, toilets and appliances.
- Wash only full loads of laundry.
- Do not use the toilet for trash disposal.
- Take shorter showers.
- Do not let the water run while shaving or brushing teeth.
- Soak dishes before washing.
- Run the dishwasher only when full.

### You can conserve outdoors as well:

- Water the lawn and garden in the early morning or evening.
- Use mulch around plants and shrubs.
- Repair leaks in faucets and hoses.
- Use water-saving nozzles.
- Use water from a bucket to wash your car, and save the hose for rinsing.

## Source Water Assessment Completed

Under the provisions of the Safe Drinking Water Act, states are required to develop comprehensive Source Water Assessment Programs (SWAPs) that identify the watersheds that supply public tap water, provide an inventory of contaminants present in the watershed, and assess susceptibility to contamination in the watershed. The New Jersey Department of Environmental Protection (NJDEP) has completed and issued a Source Water Assessment Report and Summary for Picatinny Arsenal's water system, which is available at <http://www.nj.gov/dep/watersupply/swap/index.html>, or by contacting Picatinny's Environmental Affairs Directorate (Building 319), or the NJDEP, Bureau of Safe Drinking Water at 609-292-5550 or watersupply@dep.nj.gov.

The Source Water Assessments were completed at the end of December 2004 for all community water systems. The source water assessment was performed on three wells (131, 302, & 410) where the following Susceptibility Ratings for Picatinny Arsenal was determined.

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radio-nuclides			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	
Well 131			x	x				x		x					x		x			x		x			
Well 302		x				x			x	x					x		x			x		x			
Well 410		x		x					x	x					x		x			x		x			

The table above illustrates the susceptibility ratings for the eight conceptual contaminant categories for Picatinny's three source wells. The table provides the number of wells that were rated high (H), medium (M), or low (L) for each conceptual contaminant category. For the susceptibility ratings of purchased water, refer to the specific water systems source water assessment report. For the purpose of the Source Water Assessment Program, Radionuclides are more of a concern for ground water than surface water systems. 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 ratings reflect the conceptual potential for contamination of source water, not the existence of contamination.

Public water systems are required to monitor regulated contaminants and install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, the NJDEP may customize (change existing) monitoring schedules based on the susceptibility ratings. If you have any questions regarding source water assessment reports or summaries please contact the Bureau of Safe Drinking Water at [www.state.nj.us/dep/swap/](http://www.state.nj.us/dep/swap/) or 609-292-5550.

## The Eight Contaminant Categories are Defined Below:

- **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 manmade. 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 atropine, 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 Byproducts 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.

## Where Does My Water Come From?

Picatiny Arsenal has a total of three (3) groundwater wells that supply drinking water to the Arsenal. Well 131 is 196 feet deep and draws water from the glacial aquifer. This is our primary well. Well 302D is 403.5 feet deep and pumps groundwater from the bedrock aquifer system and is considered our back up well. As part of a well rehabilitation project for Well 302D, a new superstructure was built and the well was re-developed in 2017. Well 410 is 108 feet deep and draws water from the glacial aquifer system and is not in use at this time. The groundwater from the active community well undergoes an extensive treatment process. First, the groundwater from the operating well(s) is pumped to the primary surge tank at the water treatment plant where sodium hypochlorite (under temporary treatment permit) is injected into the water prior to filtration. The water then goes through greensand filters which remove iron and manganese. The water then proceeds through the Granular Activated Carbon Filters (GAC) which remove VOC's and perfluorinated carbons. In addition to the GAC system, water flows through an air-stripping tower for further removal of contaminants and is then pumped to a secondary surge tank. The last step in the water treatment process is the addition of chlorine for disinfection. The water treatment plant has a design capacity of one (1) million gallons of water per day but treated an average of 288,120 gallons of water per day in 2018.

American Water, Picatinny Arsenal is in the process of testing its new water treatment facility located at 1390 Farley Avenue. The treatment facility was run from March 12, 2018 through April 23, 2018. During this period, the addition of potassium permanganate and chlorine were utilized before filtration as pretreatment. All water leaving the facility into the distribution system met State regulations.

On May 19, 2018 a newly installed Granular Activated Carbon (GAC) System was placed online, for the removal of Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) from the existing water supply. The GAC system consists of two (2) vessels (contactors) operated in series to remove perfluorinated compounds from your drinking water. New regulations have been adopted by the EPA and State Regulatory Agency to test and treat for these contaminants beginning first quarter 2019. The GAC system has the benefit of removing additional contaminants and improving taste.

## Substances Expected to be in Drinking Water

To ensure that tap water is of high quality, the U.S. Environmental Protection Agency prescribes regulations limiting the amount of certain substances 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.

The source of drinking water (both tap water and bottled water) includes 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, or wildlife.

**Coliforms**, are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We have found no coliforms indicating the need to look for potential problems in the water treatment or distribution system in 2018. If this were to occur, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

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

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 (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. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

## Information about Lead

### *Is there lead in my water?*

Although we regularly test lead levels in your drinking water, it is possible that lead and/or copper levels at your home are higher because of materials used in your home plumbing. If present, elevated levels of lead can cause serious 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. American Water is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. We take steps to reduce the potential for lead to leach from your pipes into the water. This is accomplished by maintaining the quality of your water leaving our treatment facilities. There are steps that you can take to reduce your household's exposure to lead in drinking water.

If you are concerned about lead in your drinking 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 EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

## Technical Information (Health Effects)

Consumer Confidence Reports (CCR's) require a brief discussion of any contaminants that have an established Maximum Contaminant Level (MCL) and register above Minimum Detection Levels (MDL) in the drinking water. CCR's also require an educational discussion of the effects of Cryptosporidium, radon, and other contaminants.

**SODIUM** (Health effects) – 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 of concern to individuals on a sodium restricted diet. The RUL for sodium is 50 parts per million (ppm) and our water system detected sodium at 84.1 ppm in Quarter 1, 86.5 ppm in Quarter 2, 76.3 ppm in Quarter 3, and 131.0 ppm in Quarter 4 of 2018.

**BARIUM** (Health effects) - Water containing high levels of Barium may cause an increase in blood pressure.

**SULFATE** (Health effects) - Water containing high levels of sulfate may cause diarrhea similar to laxatives.

**HARDNESS** (Health effects) - There are no negative health effects associated with high levels of hardness in drinking water.

**MANGANESE** (Health effects) – The recommended upper limit 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.

**CHLORIDE** (Health effects) - Not much is known about the health effects of chlorides. Negative health effects are usually associated with salts like sodium, calcium, and potassium that they are attached to.

**LEAD** (Health effects) - Infants and children: delays in physical or mental development: children could show slight deficits in attention span and learning abilities. Adults may have kidney problems and high blood pressure.

**COPPER** (Health effects) - Short term exposure: gastrointestinal distress. Long term exposure: liver or kidney damage. People with Wilson's disease should consult their personal doctor if their water exceeds the action level.

**1,3-DICHLOROBENEZE** (Health effects) - Some people who drink water containing 1,3-Dichlorobeneze in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory system. (Sources) Discharge from industrial chemical factories.

**1,1-DICHLOROETHANE** (Health effects) - Some people who drink water containing 1,1, Dichloroethane in excess of the MCL over many years could experience problems with their kidneys. (Sources) Discharge from metal degreasing sites and other factories.

**NAPHTHALENE** (Health effects) - Some people who drink water containing Naphthalene in an excess of the MCL over many years could experience problems with cataracts and hemolytic anemia. (Sources) Discharge from industrial chemical factories, exposure to mothballs.

**1,1,2,2-TETRACHLOROETHANE** (Health effects) - Some people who drink water containing 1,1,2,2-Tetrachloroethane in excess of the MCL over many years could experience problems with their liver, kidneys, and central nervous system. (Sources) Discharge from industrial chemical factories.

**METHYL TERTIARY BUTYL ETHER (MTBE)** (Health Effects) - MTBE is used to increase the octane rating of gasoline, and more recently has been added to gasoline to meet the requirements of the clean air act, which requires increased oxygen content of gasoline in both CO and ozone non-attainment areas. Typical concentrations in gasoline are 2 – 8 % by volume for increasing octane ratings. A MCL of 70 ug/l for MTBE has been derived based on increased kidney weight seen in sub-chronic gavage studies and its classification as a possible human carcinogen.

**TRICHLOROETHENE** (Health Effects) - The EPA sets drinking water standards and has determined that trichloroethene is a health concern at certain levels of exposure. This chemical is a common metal cleaning and dry cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels over their lifetimes. Chemicals that cause cancer in laboratory animals may also increase the risk of cancer in humans that are exposed to lower levels over long periods of time. EPA has set forth the enforceable drinking water standard of 5.0 ug/l (New Jersey has a maximum contaminant level of 1 ug/l) to reduce the risk of cancer or other adverse health effects which may have been observed in laboratory animals. Drinking water that meets this standard is associated with little to any of this risk and should be considered safe.

**DIBROMOCHLOROMETHANE** (Health Effects) - Dibromochloromethane are formed as by-products when chlorine is added to water supply systems. High levels of Dibromochloromethane can damage the liver and kidneys and affect the brain. Dibromochloromethane has been found in at least 141 and 172, respectively, of the 1636 National Priority List sites identified by the EPA.

**TOTAL TRIHALOMETHANE** (Health Effects) - Trihalomethanes are formed as by-products when chlorine is added to water supply systems. High levels of Trihalomethanes can damage the liver, kidneys and affect the brain. The MCL is 80 ppb and the water is tested at the furthest part in the distribution system to allow for the longest time for the parameters to develop.

**HALOACETIC ACIDS (HAA5)** (Health Effects) - Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

**TOTAL DISSOLVED SOLIDS (TDS)** (Health Effects)

This contaminant may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.

**ZINC** (Health Effects) - This contaminant may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.

**IRON** (Health Effects) - This contaminant may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.

**CHROMIUM** (Health Effects) - Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

**Perfluorooctane Sulfonate (PFOS)** (Health Effects) - studies indicate that exposure over certain levels may result in adverse health effects including, developmental effects to fetuses during pregnancy or to breastfed infants, liver effects, immune effects and thyroid effects.

**Perfluorooctane Acid (PFOA)** (Health Effects) - studies indicate that exposure over certain levels may result in adverse health effects including, developmental effects to fetuses during pregnancy or to breastfed infants, liver effects, immune effects and thyroid effects.

## Compliance with other Drinking Water Regulations

**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. Our system has received monitoring waivers for the following:

**Asbestos Waiver** – The NJDEP determined that our system is not considered to be vulnerable to asbestos contamination. Our water was found to not be corrosive and our wells are not located in an area known to have asbestos-bearing rock formations. American Water has satisfied the NJDEP requirements by sampling for asbestos for the compliance period of 1/1/2011 through 12/31/2019.


**Pesticides and Synthetic Organic Compounds (SOC's)** – The NJDEP determined that our system is not considered to be vulnerable based on an extensive survey of the Arsenal land use. The NJDEP issued a waiver to Picatinny Arsenal for the period 1/1/2014 through 12/31/2016. The SOC's waiver for compliance period 1/1/2017 through 12/31/2019 is currently under review with NJDEP.

## How to Read the Data Tables

Starting with **Contaminants**, read across the row. The **Year Sampled** is the year the sample was collected and analyzed, (usually in 2018 or years prior, as required by our State issued sampling plan), **MCLG (Maximum Contaminant Level Goal)** is the goal level for that substance (this may be lower than what is allowed), **MCL (Maximum Contaminant Level)** shows the highest level of substance (contaminant) allowed, **Result**, specifies the concentrations of a parameter analyzed by an independent State Certified laboratory, **MDL (Minimum Detection Limit)** details the lowest measurement laboratory equipment can accurately quantify), A **NO** under **Exceeded Standard MCL** means the amount of the substance met government requirements and **Likely Source of Contaminant** explains where the substance usually originates.

Unregulated substances are measured, but maximum allowed contaminant levels have not been established by the government.

## Table Definitions and Abbreviations

- **AL (Action Level):** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
  - **MDL (Minimum Detection Limit):** The lowest measurement laboratory equipment can accurately quantify.
  - **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 disinfectant routinely allowed in drinking water. 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.
  - **RUL (Recommended Upper Limit)** Recommended maximum concentration of secondary contaminants. These reflect aesthetic qualities such as odor, taste or appearance. RULs are recommendations, not mandates.
  - **mrem/year:** Millirems per year (a measure of radiation absorbed by the body).
  
  - **NA:** Not applicable
  - **ND:** Not detected.
  - **NTU – Nephelometric Turbidity Units:** Measurement of the clarity, or turbidity, of water.
  - **pCi/L (picocuries per liter):** Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).
  - **pH:** A measurement of acidity, 7.0 being neutral.
  - **ppm (parts per million):** One part substance per million parts water, or milligrams per liter.
  - **ppb (parts per billion):** One part substance per billion parts water, or micrograms per liter.
  - **ppt (parts per trillion):** One part substance per trillion parts water, or micrograms per liter.
  - **RL Reporting Limit:** Lowest concentration recognized by a certified laboratory.
  - **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.
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## Water Quality Statement

Our staff at American Water O&M, here at the Picatinny Arsenal Water Treatment Facility monitors water quality from many sources on a daily basis. We also collect approximately 100 samples each year and send these samples to an EPA approved, New Jersey certified laboratory to analyze your drinking water. Our personnel take samples from the distribution system and at consumer taps. Samples are then shipped to the lab where a full spectrum of water quality analyses is performed.

## Detected Contaminants

A detected contaminant is any contaminant detected at or above its minimum detection limit (MDL). The EPA requires that this report show the HIGHEST level of each detected contaminant that is above the MINIMUM detection limit. A contaminant below the MDL is considered to be Non Detectable (ND).

The following tables present the highest level of contaminants that registered above the Minimum Detection Limit for the reporting period. All units are in parts per billion (ppb) unless otherwise stated.

## REGULATED PARAMETERS

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 (800-426-4791).

Contaminants	Year Sampled	MCLG Treated Water	MCL Treated Water	Results	MDL/RL	Exceeded Standard MCL	Likely Source of Contaminant
<b>Inorganic Compounds</b>							
Arsenic (ppb)	2018	0	5	ND	0.253	No	Erosion from natural deposits; Runoff from orchards; Runoff from glass and electronics productions wastes
Barium (ppm)	2018	2	2	0.0846	0.000172	No	Discharge of drilling waters; Discharge from metal refineries; Erosion of natural deposits
Beryllium (ppb)	2018	4	4	ND	0.161	No	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	2018	5	5	ND	0.158	No	Corrosion of galvanized pipes; Erosion of natural deposits; Metal refineries discharge; Waste batteries and paint runoff
Chromium (ppb)	2018	100	100	.00502	0.409	No	Discharge from steel and pulp mills, Erosion of natural deposits
Nickel (ppb)	2018	100	100	0.00353	0.204	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Antimony (ppb)	2018	6	6	ND	0.365	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Selenium (ppb)	2018	50	50	ND	3.61	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Mercury (ppb)	2018	2	2	ND	0.167	No	Discharge from steel /metal factories; Discharge from plastic and fertilizer factories
Nitrate (ppm)	2018	10	10	ND	0.02	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Thallium (ppb)	2018	2	2	ND	0.122	No	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories
Fluoride (ppm)	2018	4	4	ND	0.05	No	Erosion from natural deposits; Water additive which promotes strong teeth
Cyanide (ppb)	2018	200	200	ND	0.003	No	Discharge from steel /metal factories; Discharge from plastic and fertilizer factories
<b>Disinfectant Byproducts</b>							
Total Trihalomethanes (TTHMs) (ppb)	2018	N/A	80	29.36	1	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	2018	N/A	60	ND	1	No	By-product of drinking water chlorination
<b>Volatile Organic Compounds</b>							
Methyl Tertiary Butyl Ether-MTBE (ppb)	2018	70	70	ND	0.5	No	Can occur through leaking underground tanks, pipelines, spills and marine engines in lakes.
Trichloroethene (ppb)	2018	0	1	ND	0.5	No	Degreasing operations
1,3-Dichlorobenzene (ppb)	2018	600	600	ND	0.5	No	Discharge from industrial chemical factories
1,1-Dichloroethane (ppb)	2018	50	50	ND	0.5	No	Discharge from metal degreasing sites

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Contaminants	Year Sampled	MCLG Treated Water	MCL Treated Water	Results	MDL/RL	Exceeded Standard MCL	Likely Source of Contaminant
<b>Volatile Organic Compounds</b>							
Naphthalene (ppb)	2018	300	300	ND	0.5	No	Discharge from industrial chemical factories, mothballs.
1,1,2,2-Tetrachloroethane (ppb)	2018	1	1	ND	0.5	No	Discharge from industrial chemical factories
<b>Radioactive Contaminants</b>							
Contaminants	Year Sampled	MCLG Treated Water	MCL Treated Water	Result	MDL	Exceeded Standard MCL	Likely Source of Contaminant
Gross Alpha (pCi/l)	2018	0	15	ND	2.66	No	Radioactive substances that are both naturally occurring and man-made
Radium 226/228 (pCi/l)	2018	0	5	ND	1	No	Radioactive substances that are both naturally occurring and man-made
Uranium	2018	0	30 ug/l	1.32 pCi/l	N/A	No	Radioactive substances that are both naturally occurring and man-made
<b>Microbiological Contaminants</b>							
Contaminants	Year Sampled	MCLG Treated Water	MCL Treated Water	Result	MDL	Exceeded Standard MCL	Likely Source of Contaminant
Total Coliform (Triggered Assessment)	2018	0	One positive sample per month	<1	1 Col/mL	No	Naturally occurring in the environment

1. An Assessment occurs when a sample confirms the presence of E. Coli or the exclusion of E. Coli analysis on a positive total coliform sample.

<b>Lead and Copper<sup>1</sup></b>								
Contaminants	Year Sampled	MCL Treated Water	MCLG Treated Water	90 <sup>th</sup> Percentile <sup>2</sup>	MDL	Sites Above AL	Exceeded Standard MCL	Likely Source of Contaminant
Lead (ppb)	2018	AL=15	0	ND	0.03	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	2018	AL=1.3	1.3	0.526	0.00002	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

1. The Picatinny Arsenal water system is on a reduced lead and copper sampling schedule where samples must be collected every three years. As the table reflects, samples were collected in year 2018.
2. An action level of 15 ug/l for lead and 1.3 mg/l for copper is based on 90<sup>th</sup> percentile level of tap water samples collected. An action level exceedance is not a violation but can trigger other requirements that include water quality parameter monitoring, corrosion control treatment, source water monitoring/treatment, public education and lead service line replacements.

## SECONDARY CONTAMINANTS

Contaminants	Year Sampled	RUL Treated Water	Result	MDL	Exceedance Standard MCL	Likely Source of Contaminant
Hardness (ppm)	2018	250	239	5	No	Naturally occurring minerals
Silver (ppm)	2018	0.1	ND	0.08	No	Naturally occurring element
Aluminum (ppm)	2018	0.2	ND	0.15	No	Naturally occurring element
Iron (ppm)	2018	0.3	ND	0.02	No	Naturally occurring element
Manganese (ppm)	2018	0.05	ND	0.04	No	Naturally occurring element
Sodium (ppm)	2018	50	131.0	5	Yes	Erosion of natural deposits; Road salting/de-icing
Sulfate (ppm)	2018	250	23	2.5	No	Erosion of natural deposits
Zinc (ppm)	2018	5	ND	0.25	No	Naturally occurring element
Chloride (ppm)	2018	250	198	2.5	No	Erosion of natural deposits; Road salting/de-icing
Alkalinity (ppm)	2018	N/A	173	5	No	Physical Characteristic
pH (Standard Units)	2018	6.5 - 8.5	8.08	--	No	Physical Characteristic
Color (Color Units)	2018	10	ND	3	No	Physical Characteristic
Detergents ABS/LAS (ppm)	2018	0.5	ND	0.015	No	Synthetic Detergents
Odor (Threshold Odor)	2018	3	ND	1	No	Physical Characteristic
Total Dissolved Solids (ppm)	2018	500	477	20	No	Erosion of natural mineral deposits

1. Only one of the secondary contaminants, sodium, exceeded State RUL (Recommended Upper Limit).

## UNREGULATED CONTAMINANTS MONITORING RULE (UCMR3)

Contaminants	Year Sampled	MCLG	MCL	Result	MDL	Likely Source of Contaminant
Molybdenum	2013	See Note <sup>1</sup>	None	1.15	1	Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.
Strontium	2013	See Note <sup>1</sup>	None	132.0	0.3	

1. No State required MCLG

## NEWLY ADOPTED REGULATIONS (EPA and STATE)

In anticipation of newly adopted regulations by the State Agency (NJDEP) effective first quarter 2019, American Water proactively sampled for Perfluorinated Compounds within the source and treated water system. Levels reported during the 2013 UCMR3 sampling period were recorded as Non-Detect and below the method detection limit of 0.02 ug/l (ppb) and 0.04 ug/l (ppb) for PFOA and PFOS respectively.

Since 2013, the laboratory detection value (method detection limit) for perfluorinated compounds (EPA 537) has reduced from parts per billion (ppb) to parts per trillion (ppt). Similarly, regulatory recommended guidance values have also been established in parts per trillion. In 2017, The New Jersey Department of Environmental Protection (NJDEP) has established a guidance value of 14 ppt for PFOA, while the EPA has established a lifetime health advisory (LHA) of 70 ppt combined level for PFOA and PFOS. We are pleased to report that the newly constructed Granular Activated Carbon Units (GAC) are effectively removing these contaminants to a Non-Detectable limit since it has been placed in service on May 18, 2018.

## PERFLUORINATED COMPOUNDS (UNREGULATED)\*

Contaminants	Year Sampled	MCLG	MCL	Result	MDL	Likely Source of Contaminant
PFBS (ppt)	2018	See Note	None	16.1*	5.0	Compound used in the manufacturing of household products
PFHXA (ppt)	2018	See Note	None	11.8*	5.0	Compound used in the manufacturing of household products
PFHXS (ppt)	2018	See Note	None	60.1*	5.0	Compound used in the manufacturing of household products
PFOA (ppt)	2018	See Note	None	12.4*	5.0	Compound used in the manufacturing of household products
PFOS (ppt)	2018	See Note	None	83.7*	5.0	Compound used in the manufacturing of household products
PFNA (ppt)	2018	See Note	None	ND*	5.0	Compound used in the manufacturing of household products

1. No State required MCLG

\*Results reported in the table above represent the highest detectable values in a 12 month period. Since the installation of the GAC system all samples collected and analyzed have resulted in non-detectable limits within the system.