

## *2021 Consumer Confidence Report for NSA Saratoga Springs*

### **INTRODUCTION**

To comply with Navy regulations, Naval Support Activity Saratoga Springs provides an annual report (Consumer Confidence Report or CCR) describing the quality of the drinking water supplied to the base for consumption and use by all Navy personnel, visitors, contractors that have access to base facilities and its services. Its goal is to provide information on where the water comes from and provide information on the results of water quality tests performed in 2021. Last year, test results showed that the water on base met all state drinking water health standards.

### **WHERE DOES THE CITY'S WATER COME FROM? (Source: City of Saratoga Springs NY Consumer Confidence Report)**

<https://saratoga-springs.org/179/Annual-Drinking-Water-Quality-Report>

NSA Saratoga Springs receives water from the City of Saratoga Springs. The City of Saratoga Spring's water sources 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. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State of New York and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. Later in this report there is information regarding the contaminants that have been detected in the city's water system.

The city receives surface water from the Loughberry Lake Watershed and ground water from the Geyser Crest system, (Hathorn Blvd. and Quevic Dr). Water is also pumped into Loughberry Lake from Bog Meadow Brook, (Ingersoll Road Saratoga Springs), and three Bog Meadow groundwater wells during the high demand summer months to help maintain the lake level. During 2021, the city's system did not experience any restriction of water source.

The Loughberry Lake source is treated conventionally at the Excelsior Avenue treatment plant with flocculation, sedimentation, and filtration. It is disinfected with a combination of ultraviolet light and sodium hypochlorite application. Fluoride is added to attain the optimal level of fluoride in the finished water to aid in preventing tooth decay. Phosphate is added for corrosion control. The Geyser Crest wells are disinfected with sodium hypochlorite and fluoride is added. Although all the systems are interconnected, Loughberry Lake is our primary source and supplies most of the city. The Geyser Crest wells supply the Geyser Crest Subdivision and a portion of the southwest section of the city.

### **ARE THERE CONTAMINANTS IN THE CITY'S DRINKING WATER?**

As state regulations require, the city routinely tests its drinking water for numerous contaminants. These contaminants include: total coliform bacteria, turbidity, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, radiological aspects and synthetic organic compounds. The table presented below depicts which compounds were detected in the drinking water. The state allows tests for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative, is more than one year old.

It should be noted that all drinking water, including bottled drinking water, may be reasonably 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 (800-426-4791) or the New York State Department of Health, Glens Falls Regional Office at (518) 793-3893.

### **DEFINITIONS:**

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

**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.

**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.

**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.

**Nephelometric Turbidity Unit (NTU)**: A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Non-Detects (ND):** Laboratory analysis indicates that the constituent is not present.

Table of Detected Contaminants – Loughberry Lake Watershed							
Contaminant	Violation Yes/No	Date of Sample	Level Detected (Average) (Range)	Unit of Measure	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
<b>Microbiological Contaminants</b>							
Turbidity <sup>1</sup>	No	08/12/21	0.311	NTU	N/A	TT = 1	Soil runoff
Turbidity	No	2021	100% < 0.3	NTU	N/A	95% < 0.3	Soil runoff
<b>Inorganic Contaminants</b>							
Alkalinity, Total (Raw Water)	No	Monthly 2021	150.8 (130 - 170)	mg/L	N/A	N/A	Naturally occurring.
Barium	No	12/15/21	0.029	mg/L	2	MCL = 2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Copper	No	2021	0.063 <sup>2</sup> (ND - 0.139) <sup>3</sup>	mg/L	1.3	AL = 1.3	Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives.
Chloride	No	12/15/21	120	mg/L	N/A	MCL = 250	Naturally occurring or indicative of road salt contamination.
Lead	No	2021	1.8 <sup>2</sup> (ND- 7.9) <sup>3</sup>	µg/L	0	AL = 15	Corrosion of household plumbing systems; Erosion of natural deposits.
Nickel	No	12/15/21	0.0014	mg/l	N/A	N/A	Naturally occurring.
Nitrate (as Nitrogen)	No	12/15/21	0.89	mg/L	10	MCL = 10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Organic Carbon, Total	No	Monthly 2021	2.4 (1.8 – 3.1)	mg/L	N/A	N/A	Naturally occurring.
Sodium	No	12/15/21	59 <sup>6</sup>	mg/L	N/A	N/A	Naturally occurring; Road salt; Water softeners; Animal waste.
Sulfate	No	12/15/21	17	mg/L	n/a	MCL = 250	Naturally occurring.
<p><b>Units:</b> <u>Milligrams per liter (mg/L):</u> Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).  <u>Micrograms per liter (µg/L):</u> Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb). <u>Nanograms per liter (ng/L):</u> Corresponds to one part of liquid in one trillion parts of liquid (parts per trillion - ppt).  <u>Picocuries per liter (pCi/L):</u> A measure of the radioactivity in water.  <u>Millirems per year (mrem/yr):</u> A measure of radiation absorbed by the body.</p>							

**NOTES – LOUGHBERRY LAKE WATERSHED:**

- 1 – Turbidity is a measure of the cloudiness of the water. It is tested because it is a good indicator of the effectiveness of the city’s filtration system. The highest single turbidity measurement (0.311 NTU) for the year occurred on August 12<sup>th</sup>, 2021. State regulations require that turbidity must always be below 1 NTU. The regulations also require that 95% of the turbidity samples collected have measurements below 0.3 NTU. In 2021 100% of the city’s measurements met that requirement.
- 2 – The level presented represents the 90<sup>th</sup> percentile of the sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90<sup>th</sup> percentile is equal to or greater than 90% of the lead and copper values detected in the water system. In this case 30 samples were collected in the system and the 90<sup>th</sup> percentile value was 0.63 mg/L for copper and 0.0034 mg/L for lead. The action level for copper was not exceeded at any of the sites tested. The action level for lead was not exceeded at any of the sites tested during the year.
- 3 – The level presented represents the range of results.
- 4 – Compliance for TTHM and HAA5 MCLs is based on a locational running annual arithmetic average (LRAA), computed quarterly, of quarterly averages of all samples. The highest locational running average for the year 2021 is shown for each sample site. The highest LRAA for HAA5 occurred during the 1<sup>st</sup> quarter for all sites tested. The highest LRAA for TTHM occurred during the 1<sup>st</sup> quarter for the Hilton and DPW and during the 3<sup>rd</sup> quarter for Denny’s and Longfellow’s.
- 5 – The level presented represents the range of results for the four quarterly samples collected at each site in 2021.
- 6 – Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.

**Table of Detected Contaminants – Loughberry Lake Watershed (Continued)**

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Average) (Range)	Unit of Measure	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
<b>Organic Contaminants</b>							
Perfluorooctanoic acid (PFOA)	No	1/12/21	2.36	ng/L	N/A	MCL = 10	Released into the environment from widespread use in commercial and industrial applications.
Perfluorooctane sulfonic acid (PFOS)	No	1/12/21	ND	ng/L	N/A	MCL = 10	Released into the environment from widespread use in commercial and industrial applications.
<b>Stage-2 Disinfection Byproducts</b>							
Haloacetic Acids (HAAs)	No	Quarterly 2021	Denny's 33.5 <sup>4</sup> (19.8 – 56) <sup>5</sup> Hilton Garden 26.6 (19.9 – 32.4) DPW 26.4 (18 – 31.4) Longfellows 30.4 (20.7 – 49.5)	µg/L	N/A	MCL = 60	By-product of drinking water disinfection needed to kill harmful organisms.
Trihalomethanes (TTHMs)	No	Quarterly 2021	Denny's 58.5 <sup>4</sup> (38-80) <sup>5</sup> Hilton Garden 52.5 (32-66) DPW 40.5 (20-63) Longfellows 56 (24-79)	µg/L	N/A	MCL = 80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.
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- 4 – Compliance for TTHM and HAA5 MCLs is based on a locational running annual arithmetic average (LRAA), computed quarterly, of quarterly averages of all samples. The highest locational running average for the year 2021 is shown for each sample site. The highest LRAA for HAA5 occurred during the 1<sup>st</sup> quarter for all sites tested. The highest LRAA for TTHM occurred during the 1<sup>st</sup> quarter for the Hilton and DPW and during the 3<sup>rd</sup> quarter for Denny's and Longfellow's.
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**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**Nephelometric Turbidity Unit (NTU):** A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Non-Detects (ND):** Laboratory analysis indicates that the constituent is not present.

**Table of Detected Contaminants – Geyser Crest Subdivision**

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Inorganic Contaminants							
Barium	No	12/08/20	0.045	mg/L	2	MCL = 2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Copper	No	08/2021	0.051 <sup>1</sup> (ND-0.110) <sup>2</sup>	mg/L	1.3	AL = 1.3	Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives.
Chloride	No	12/15/21	160	mg/L	N/A	MCL = 250	Naturally occurring or indicative of road salt contamination.
Fluoride	No	12/8/20	0.661	mg/L	N/A	MCL = 2.2	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories.
Lead	No	08/2021	1.1 <sup>1</sup> (ND – 1.4) <sup>2</sup>	µg/L	0	AL = 15	Corrosion of household plumbing systems; Erosion of natural deposits.
Manganese	No	12/15/21	0.011	ng/l	N/A	MCL=0.3	Naturally occurring; Indicative of landfill contamination.
Nitrate (as Nitrogen)	No	12/15/21	0.85	mg/L	10	MCL = 10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Sodium	No	12/15/21	79 <sup>3</sup>	mg/L	N/A	N/A	Naturally occurring; Road salt; Water softeners; Animal waste.
Sulfate	No	12/15/21	28	mg/L	n/a	MCL = 250	Naturally occurring.
<p><b>Units:</b> <b>Milligrams per liter (mg/L):</b> Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).  <b>Micrograms per liter (µg/L):</b> Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb). <b>Nanograms per liter (ng/L):</b> Corresponds to one part of liquid in one trillion parts of liquid (parts per trillion - ppt).  <b>Picocuries per liter (pCi/L):</b> A measure of the radioactivity in water.  <b>Millirems per year (mrem/yr):</b> A measure of radiation absorbed by the body.</p>							

**NOTES – GEYSER CREST SUBDIVISION:**

1 – The level presented represents the 90<sup>th</sup> percentile of the 20 sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90<sup>th</sup> percentile is equal to or greater than 90% of the values detected at your water system. In this case 20 samples were collected at the water system and the 90th percentile value was 0.032 mg/L for copper and 0.0010 mg/L for lead. The action levels for copper and lead were not exceeded at any of the sites tested.

2 – The level presented represents the range of results.

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Contaminant	Violation Yes/No	Date of Sample	Level Detected (Average) (Range)	Unit of Measure	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
<b>Organic Contaminants</b>							
Perfluorooctanoic acid (PFOA)	No	1/12/21	0.792	ng/L	N/A	MCL = 10	Released into the environment from widespread use in commercial and industrial applications.
Perfluorooctane sulfonic acid (PFOS)	No	1/12/21	ND	ng/L	N/A	MCL = 10	Released into the environment from widespread use in commercial and industrial applications.
PERFLUOROBUTANESULFONIC ACID (PFBS)	No	4/6/21	0.001	µg/L	N/A	MCL = 50	Released into the environment from widespread use in commercial and industrial applications.
PERFLUOROHEPTANOIC ACID (PFHPA)	No	4/6/21	0.00045	µg/L	N/A	MCL = 50	Released into the environment from widespread use in commercial and industrial applications.
PERFLUOROHEXANOIC ACID (PFHXA)	No	4/6/21	0.00079	µg/L	N/A	MCL = 50	Released into the environment from widespread use in commercial and industrial applications.
<b>Stage-1 Disinfection Byproducts</b>							
Haloacetic Acids (HAAs)	No	07/22/21	2.10	µg/L	N/A	MCL = 60	By-product of drinking water disinfection needed to kill harmful organisms.
Trihalomethanes (TTHMs)	No	07/22/21	6.40	µg/L	N/A	MCL = 80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.
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**UNREGULATED CONTAMINANTS**

The following chart contains the results of testing for a series of unregulated contaminants. Unregulated contaminants are those that do not yet have a drinking water standard set by the EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard. The following chart shows the ranges of the contaminants found in the samples taken throughout the test period (2018 through 2021). A list of all contaminants tested for during this period can be found below.

<b>Table of Detected Unregulated Contaminants</b>				
<b>Contaminant</b>	<b>Unit of Measure</b>	<b>Regulatory Limit (MCL or MCLG)</b>	<b>Level Detected</b>	<b>Use or Environmental Source<sup>1</sup></b>
<b>Loughberry Lake Watershed</b>				
PFOA (Perfluorooctanoic Acid)	ng/L	N/A	1.82 (2021)	By-product of drinking water disinfection needed to kill harmful organisms.
PFOA (Perfluorooctanoic Acid)	ng/L	N/A	0.792 (2021)	By-product of drinking water disinfection needed to kill harmful organisms.
Bromide	mg/L	N/A	.05 (2018) <sup>3</sup>	Naturally Occurring
Haloacetic Acids (HAA5s) 2018 Quarterly	µg/L	N/A	Denny's 19.1 <sup>2</sup> (14.9-24.6) Hilton Garden 21.5 (14.1-27.8) DPW 18.5 (15.7-21.5) Skidmore 20.1 (14.0-24.9)	By-product of drinking water disinfection needed to kill harmful organisms.
<b>Units:</b> <u>Milligrams per liter (mg/L):</u> Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm). <u>Micrograms per liter (µg/L):</u> Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb). <u>Nanograms per liter (ng/L):</u> Corresponds to one part of liquid in one trillion parts of liquid (parts per trillion - ppt). <u>Picocuries per liter (pCi/L):</u> A measure of the radioactivity in water. <u>Millirems per year (mrem/yr):</u> A measure of radiation absorbed by the body.				

**NOTES – DETECTED UNREGULATED CONTAMINATES:**

1- "Use or Environmental Source" further documented in UCMR 4 – Fact Sheet Assessment Monitoring on the Fourth Unregulated contaminant Monitoring Rule. EPA 815-F-16-006. December 2016

2– The level presented represents the range of results for the four quarterly samples collected at each site in 2018.

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<b>Contaminant</b>	<b>Unit of Measure</b>	<b>Regulatory Limit (MCL or MCLG)</b>	<b>Level Detected</b>		<b>Use or Environmental Source<sup>1</sup></b>
<b>Loughberry Lake Watershed</b>					
Haloacetic Acids (HAA6s) 2018	µg/L	N/A	Denny's 7.8 <sub>2</sub> (5.9-10.1) Hilton Garden 8.6 (5.0-13.1)	DPW 7.8 (5.7-10.3) Skidmore 8.1 (5.0-11.8)	By-product of drinking water disinfection needed to kill harmful organisms.
Haloacetic Acids (HAA9s) 2018	µg/L	N/A	Denny's 26.3 <sup>2</sup> (20.3-32.6) Hilton Garden 29.5 (19.1-38.5)	DPW 25.9 (21.1-29.8) Skidmore 27.7 (19.0-34.6)	By-product of drinking water disinfection needed to kill harmful organisms.
Manganese	µg/L	N/A	7.83 (2018) <sup>3</sup>		Naturally Occurring
<p><b>Units:</b> <u>Milligrams per liter (mg/L):</u> Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).  <u>Micrograms per liter (µg/L):</u> Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).  <u>Nanograms per liter (ng/L):</u> Corresponds to one part of liquid in one trillion parts of liquid (parts per trillion - ppt). <u>Picocuries per liter (pCi/L):</u> A measure of the radioactivity in water.  <u>Millirems per year (mrem/yr):</u> A measure of radiation absorbed by the body.</p>					

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**WHAT DOES THIS INFORMATION MEAN?**

The information in the tables above indicate that the city’s system had no MCL violations in 2021. Testing has indicated that some contaminants have been detected; however, these contaminants were detected below the level allowed by the State of New York.

**IS THE CITY’S WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?**

During 2021, the city’s system was in compliance with applicable state drinking water operating, monitoring and reporting requirements.

**INFORMATION ABOUT LEAD IN DRINKING WATER AND ITS EFFECT ON CHILDREN:**

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Saratoga Springs, through the Loughberry

Lake, Geysers Crest and Interlaken 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 <http://www.epa.gov/safewater/lead>.

#### **INFORMATION ABOUT COPPER IN DRINKING WATER:**

Copper is an essential nutrient, but some people who drink water containing copper in excess of the AL over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the AL over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor to determine if copper levels in drinking water could present a health risk.

#### **INFORMATION ON FLUORIDE ADDITION:**

The city's system is one of many drinking water systems in the State of New York that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the United States Center for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at a target level of 0.7 mg/L (part per million). To ensure that the fluoride supplement in your water provides optimal dental protection, the NYDOH requires that we monitor fluoride levels on a daily basis. During 2021 the city's monitoring showed daily fluoride levels for its two plants were within 0.3 mg/L of the target level as recommended by the NYDOH. None of the monitoring results showed fluoride at levels that approached the 2.2 mg/L MCL for fluoride.

#### **INFORMATION ON PERFLUORINATED COMPOUNDS & 1,4-DIOXANE:**

The State of New York has adopted the first in the nation drinking water standard for 1,4-Dioxane along with one of the lowest maximum contaminant levels for PFOA and PFOS. Public Water Supplies in New York are required to test for PFOA, PFOS and 1,4-Dioxane. PFOA and PFOS have Maximum Contaminant Levels (MCL) of 10 parts per trillion (ng/l) each while 1,4-Dioxane has an MCL of 1.0 parts per billion (µg/l). The city has completed four quarters of sampling for Loughberry and Geysers Crest. The data shows compliance with the new MCLs for PFOA and PFOS & no detects for 1,4-Dioxane. The data presented in the table shows the highest level detected in 2021. The results ranged from ND-0.792 ng/l in 2021.

#### **Composite Filter Monitoring Information:**

The highest single composite turbidity measurement for the year was 0.311 on August 12th, 2021. The regulations require that 95% of the turbidity samples collected have measurement below 0.3 NTU. In 2021, 100% of the city's measurements met that requirement.

#### **DO I NEED TO TAKE SPECIAL PRECAUTIONS?**

Although the city's drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens 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 from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791) or at: <https://www.epa.gov/ground-water-and-drinking-water>

#### **BASE WATER SYSTEM DESCRIPTION**

NSA Saratoga receives its water from the City of Saratoga Springs New York. Water enters the base through a service connection on Buff Road just west of the base security fence that is located behind the Commissary.



Once water enters the base it is distributed to facilities on base through underground Navy pipes. It is important to note that there is no water treatment occurring on base, it is merely distributed to the base buildings where it is consumed or used. For this reason, the base water system is generally thought of as a simple consecutive system that is part of the overall water distribution system of the City of Saratoga Springs. For this reason, the base water system is not a public water system that is regulated by the NYDOH. Conversely, the city's system is regulated by the NYDOH as it supplies water and is responsible for water source protection and treatment systems. However, the Navy requires that the water on base is routinely tested to make sure that base occupants and visitors are provided with the same quality water as those consumers that are serviced by the city but use taps that are off the base. Navy policy also requires that NSA Saratoga monitor its own water distribution systems for contaminants that could be contributed downstream of its connections to the city's drinking water distribution system.

**NOTE:** Finished water is not provided for consumption at the off-base MWR site and there is also not a sampling plan developed for that site. Consequently, this CCR does not apply to that site.

## **2021 NSA SARATOGA WATER QUALITY MONITORING PROGRAM**

A water quality sampling plan was developed for NSA Saratoga in 2018 in order to meet Navy requirements for water quality monitoring for consumers using Navy-owned water distribution systems. The sampling plan requires that one representative bacteriological sample be taken every month and that one representative sample be taken every year and analyzed for disinfection byproducts (Total Trihalomethanes (TTHM) and Total Haloacetic Acids (HAA5)). This sampling is performed through the PW Site Manager with oversight provided by the Public Works New London Environmental Division at Naval Submarine Base New London in Groton CT. Sampling and analysis is performed by a local and certified laboratory contractor.

The NSA Saratoga Water Monitoring Program includes the following parameters:

### **Bacteriological**

Total coliform monitoring is performed to ensure that water remains free of bacteria as it travels through the distribution system and disinfectant residuals decline. Total coliforms are not pathogenic, but their presence could indicate the potential for pathogenic bacteria. If total coliforms are detected, monitoring for *Escherichia coli* (*E. coli*) is required to determine whether these pathogenic bacteria are present.

With one exception, no total coliforms were detected in the monthly bacteriological samples taken at NSA Saratoga. The representative samples were taken at either Building 101 or Building 104.

A sample taken at Building 104 on June 28, 2021 showed the presence of total coliforms. Consistent with established industry procedures, a re-sample was taken at Building 104 with results showing no detection of total coliforms or E-Coli.

### **Disinfectants and Disinfection Byproducts**

Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5) can be formed as a result of disinfection treatments performed by the City of Saratoga Springs at their water treatment plant. As water sits in pipes the disinfection chemicals can react with organic matter already in the water which causes these byproducts to develop. Monitoring is needed to ensure that these levels do not become too high as water travels through the distribution system.

Total residual chlorine (TRC) monitoring is performed at the same time as disinfection byproduct sampling as the disinfectant level in the water is directly tied to disinfection byproduct formation. An added benefit of disinfectant monitoring is that if disinfectant levels are too low, flushing can be performed to maintain an adequate disinfectant residual for the prevention of bacteriological contamination.

A representative sample was taken at Building 103 on September 30, 2021 and analyzed for TTHM and HAA5. The results showed a TTHM level of 56 ppb, well below the limit of 80 ppb. The result also showed a HAA5 level of less than 2 ppb which was well below the limit of 60 ppb.

## **PER-AND POLYFLUOROALKYL SUBSTANCES (PFAS) WATER QUALITY ANALYSES**

**What are PFAS, and where do they come from?** PFAS are a group of thousands of man-made chemicals. PFAS have been used in a variety of industries and consumer products around the globe, including in the United States, since the 1940s. PFAS have been used to make coatings and products that are used as oil and water repellents for carpets, clothing, paper packaging for food, and cookware. They are also contained in some foams (e.g., aqueous film-forming foam) used for fighting petroleum fires at airfields and in industrial fire suppression processes because they rapidly extinguish fires, saving lives and protecting property. PFAS chemicals are persistent in the environment and some are persistent in the human body, meaning that they do not break down and can accumulate over time.

**Is there a regulation for PFAS in drinking water?** There is currently no established federal water quality regulation for any PFAS compounds. In May 2016, the EPA established a health advisory (HA) level at 70 parts per trillion (ppt) for individual or combined concentrations of perfluorooctanoic

acid (PFOA) and perfluorooctanesulfonic acid (PFOS). Both chemicals are types of PFAS. Out of an abundance of caution for your safety, the United States Department of Defense's (DoD) PFAS testing and response actions go beyond current EPA SDWA requirements. In 2020, the DoD promulgated a policy to monitor drinking water for PFAS at all service owned and operated water systems at a minimum of every three years. The EPA's HA states that if water system sampling results confirm that drinking water contains PFOA and PFOS at individual or combined concentrations greater than 70 ppt, those systems should quickly undertake additional sampling to assess the level, scope, and localized source of contamination to inform next steps.

**Has the water at NSA Saratoga been tested for PFAS?** Yes. On December 8, 2021, a sample was taken from Building 117 (the base Commissary). The results showed that none of the 18 PFAS compounds covered by the sampling method, including PFOA and PFOS, were detected. This means that PFAS were not detected in the base water system. In accordance with DoD policy, the water system will be resampled every three years for continued protection of base personnel.

If you have any questions about this report or concerns regarding your drinking water, please call Richard Massad at the Public Works New London Environmental Division at Naval Submarine Base New London in Groton CT at 860-694-5140 or Daniel Lewis, Public Works Site Manager at NSA Saratoga at (518) 886-0200 x102.

**NOTE: THE FOLLOWING TABLE SUMMARIZES THE RESULTS OF THE TESTING PERFORMED AT NSA SARATOGA IN 2021 FOR BACTERIA, DISINFECTANTS AND DISINFECTION BYPRODUCTS**

NSA SARATOGA - DETECTED REGULATED CONTAMINANTS							
BACTERIOLOGICAL							
PARAMETER	UNITS	DETECTION LEVEL		MCL <sup>(1)</sup>	MCLG <sup>(2)</sup>	MET STANDARD?	MAJOR SOURCE IN DRINKING WATER
Total Coliforms	P/A	Absent (see note below)		1 present	0	Yes <sup>(3)</sup>	Naturally present in the environment
DISINFECTANTS AND DISINFECTION BYPRODUCTS							
PARAMETER	UNITS	DETECTION LEVEL		MCL <sup>(1)</sup>	MCLG <sup>(2)</sup>	MET STANDARD? <sup>(3)</sup>	MAJOR SOURCE IN DRINKING WATER
		HIGHEST RAA	RANGE				
TTHM	µg/L	77.9	56 – 77.9	80	N/A	Yes	Byproduct of drinking water chlorination
HAA5	µg/L	1	0 - 2	60	N/A	Yes	Byproduct of drinking water chlorination
TRC	mg/L	Monthly Average = 0.24	0.10 – 0.60	4	4	Yes	Drinking water disinfectant

Note: A sample taken at Building 104 on June 28, 2021 showed the presence of total coliforms. Consistent with established industry procedures, a re-sample was taken at Building 104 with results showing no detection of total coliforms or E-Coli.

<sup>(1)</sup> Maximum Contaminant Level, the highest level of a contaminant that is allowed in drinking water

<sup>(2)</sup> Maximum Contaminant Level Goal, a non-enforceable standard

<sup>(3)</sup> Indicates whether the drinking water monitoring results meet the associated SDWA water quality standards

P/A: Present or Absent

RAA: Rolling Annual Average (using values from testing performed in previous years)