



## Introduction

Naval Station Great Lakes is pleased to present its Annual Water Quality Report for the period of January 1 to December 31, 2022. This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

Naval Station Great Lakes is pleased to report that last year your tap water met or exceeded all federal and Illinois state drinking water standards. There were no samples over the Maximum Contaminant Level (MCL)

during 2022. However we did receive a notice of violation related to our aging infrastructure. See pages 4 and 5 for more information.

Naval Station Great Lakes' continuing goal is to provide all of its consumers with a safe and dependable supply of drinking water. Naval Station Great Lakes wants all customers to understand that efforts are continually being made to improve the water treatment process and to protect water resources. In short, Naval Station Great Lakes is committed to ensuring the quality of your water.

## The Source of Our Drinking Water

The source of drinking water used by Naval Station Great Lakes is Surface Water from Lake Michigan. Lake Michigan is an excellent raw water source for drinking water treatment. In order to draw the highest quality raw water from the lake, the intake is located with sufficient depth and at an adequate distance from the shore. This location mitigates any shoreline impacts to the quality of the raw water enabling the production of the highest quality drinking water to be delivered to our customers.

## About the Data

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.

The Naval Station Great Lakes Water Plant routinely monitors drinking water for these contaminants, in accordance with State and Federal laws. The following water quality table lists all of the drinking water

contaminants that we detected during the period between January 1 and December 31, 2022. Although many more contaminants were tested, only those substances listed in the table were found in your water. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old.

 <b>Contact Us</b>	<b>Naval Station Great Lakes Water Plant</b>	
For more information regarding this report contact:	<b>Supervisor</b> (847) 688-2121 x137	<b>Utilities Director</b> (847) 688-2121 x130

# Data Analysis

## 2022 Water Quality Data Table

The “**Level Reported**” column represents the highest or averaged sample result collected during the calendar year, unless otherwise noted. The “**Range**” column represents a range of individual sample results, from lowest to highest that were collected during the calendar year. The “**Sample Date**” column will show the year the sample was most recently analyzed. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The “**Violation**” column will indicate whether or not a violation occurred with each contaminant that was detected. The “**Typical Source**” information lists where contaminants may originate.

## Disinfectants & Disinfectant By-Products

There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Level Reported	Range of Levels Detected		Sample Date	Violation	Typical Source
Chlorine [as Cl <sub>2</sub> ] (ppm)	MRDLG= 4	MRDL=4	1.4	1.0	2.0	2022	No	Water additive used to control microbes
TTHMs [Total Trihalomethanes] (ppb)	NA	80	38	27.1	50	2022	No	By-product of drinking water disinfection
Haloacetic Acids [HAA5] (ppb)	NA	60	19	12.4	25.5	2022	No	By-product of drinking water disinfection

**Note:** Some sample results for regulatory compliance are based on a running annual average of quarterly samples, therefore; the result is not the highest level detected. This is the case for Cl<sub>2</sub>, TTHMs and HAA5.

## Inorganic Contaminants

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Level Reported	Range of Levels Detected		Sample Date	Violation	Typical Source
Barium (ppm)	2	2	0.02	0.02	0.02	2022	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride (ppm)	4	4	0.66	0.66	0.7	2022	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (Measured as Nitrogen) (ppm)	10	10	0.4	0.4	0.4	2022	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Sodium (ppm)	NA	NA	8 (rounded)	8.1	8.1	2022	No	Erosion of natural deposits; Leaching; Used in water softener regeneration.

**Note:** There is not a federal or state MCL for sodium. Monitoring is required for information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If the level is greater than 20 ppm, and you are on a sodium-restricted diet, you should consult a physician.

## Total Organic Carbon

The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set.

## Coliform Bacteria

Contaminants	Total Coliform MCLG	Highest # of Positive Samples for: Total Coliform	Total # of Positive Samples for: E. Coli or Fecal Coliform	Violation	Likely Source of Contamination
Total Coliform Bacteria	0	0	0	No	Naturally Present in the environment.

**Note:** If a monthly sample tests positive for Total Coliform, it is further analyzed for E. Coli. Also, repeat samples are then required to be taken from the site of the positive sample along with the upstream and downstream locations.

## Drinking Water Definitions

In the water quality data table, you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms the following definitions are provided:

**TT:** Treatment Technique or a required process intended to reduce the level of a contaminant in drinking water.  
**AL:** Action Level or the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**MCL:** Maximum Contaminant Level or 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 or 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 or the highest level of a disinfectant allowed in drinking water.

**MRDLG:** Maximum Residual Disinfectant Level Goal or the level of a drinking water disinfectant below which there is no known or expected risk to health.

**MP:** Maximum Permissible Level that is state assigned.

### UNIT DESCRIPTIONS

**ppm:** Parts per million or milligrams per liter (mg/L).

**ppb:** Parts per billion or micrograms per liter (µg/L).

**ppt:** Parts per trillion or nanograms per liter (ng/L).

**NTU:** Nephelometric Turbidity Units.

**NA:** Not applicable.

## 2022 Water Quality Data Table (Cont.)

### Turbidity

Contaminants	TT	Compliance	Sample Date	Violation	Typical Source
Turbidity (NTU)	0.3	100%	2022	No	Soil Runoff

100% of the samples were below the TT value of 0.3. A compliance value less than 95% constitutes a TT violation. The highest single measurement was 0.411 NTU. Any measurement in excess of 1 is a violation unless otherwise approved by the IEPA.

**Note:** Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.

### Lead and Copper Contaminants

Contaminants	MCLG	AL	90 <sup>th</sup> Percentile	Sample Date	# of Samples Exceeding AL	Violation	Typical Source
Copper - action level at consumer taps (ppm)	1.3	1.3	0.13	2020	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead - action level at consumer taps (ppb)	0	15	1.2	2020	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

**Note:** Naval Station Great Lakes is fully compliant with all State / Federal regulations governing the control of lead and copper within public drinking water supplies. 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. We 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>.

### Perfluoroalkyl- and Polyfluoroalkyl Substances (PFAS)

Contaminants	Sample Result	Sample Date	Method Reporting Limit (MRL)	US EPA Health Advisory Level	Violation
Perfluorooctanoic acid (PFOA) (ng/L)	2.7	2/17/2021	2.0	70	No
Perfluorooctanesulfonic acid (PFOS) (ng/L)	2.1	2/17/2021	2.0	70	No
Perfluorooctanesulfonic acid (PFOS) (ng/L)	2.3	4/5/2021	2.0	70	No

#### What are per- and polyfluoroalkyl substances and where do they come from?

Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of man-made chemicals. PFAS have been used in a variety of industrial and consumer products around the globe, including in the U.S., for decades. Due to their widespread use and environmental persistence, most people in the United States have been exposed to certain PFAS. 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 (aqueous film-forming foam or AFFF) used for fighting petroleum fires.

#### Is there a federal or Illinois regulation for PFAS in drinking water?

There is currently no federal drinking water standard for any PFAS compounds. In May 2016, the U.S. Environmental Protection Agency (EPA) established a lifetime drinking water 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.

In Illinois, there is not a PFAS drinking water regulation.

The Department of Defense (DoD) issued a policy in 2020 to monitor drinking water for PFAS at all DoD owned and operated water systems at a minimum of every three years. The DoD policy states that if water sampling results confirm that drinking water contains PFOA and PFOS at individual or combined concentrations greater than the 2016 EPA HA level of 70 ppt, water systems would 1) take immediate action to reduce exposure to PFOS or PFOA, to include providing alternative drinking water; and 2) undertake additional sampling to assess the level, scope, and localized source of contamination.

#### What about the EPA's 2022 interim Health Advisories or proposed regulations?

EPA issued interim Health Advisories for PFOS and PFOA in 2022. However these newer levels are below quantifiable limits (i.e., below detection levels). EPA is expected to issue a proposed regulation on PFAS drinking water standards for public comment in the next few months. DoD looks forward to the clarity that a nationwide regulatory standard for PFOS and PFOA in drinking water will provide.

In anticipation of this EPA drinking water regulation and to account for emerging science that shows potential health effects of PFOS and PFOA at levels lower than 70 ppt, DoD is evaluating its efforts to address PFAS in drinking water, and what actions we can take to be prepared to incorporate this standard, such as reviewing our current data and collecting additional sampling where necessary. DoD remains committed to communicating and engaging with our communities throughout this process.

#### Has Naval Station Great Lakes tested its water for PFAS?

Yes. In February and April of 2021 and in March of 2023 samples were collected from the finished water at the Water Treatment Plant. In 2021, PFOA and PFOS were detected but below the 2016 EPA HA. No other PFAS compounds covered by the sampling method were detected above the MRL. The results are provided in the table above. PFOA and PFOS were below the 2016 EPA HA of 70 parts per trillion. We continued to monitor the drinking water in accordance with the DoD policy and in April 2023, we are pleased to report that drinking water test results were below the MRL for all 18 PFAS compounds covered by the sampling method, including PFOA and PFOS. This means that PFAS were not detected in your water system and in accordance with the DoD policy, we will resample every three years for your continued protection.

# Contaminants and Protection



## EPA Source Water Assessment Completed

We want our valued customers to be informed about their water quality. If you would like to learn more, please reach out to the Public Works Department (PWD) for any questions, comments or concerns you may have. Contact information for the water department can be found on the first page of this report.

The source water assessment for our supply has been completed by the Illinois EPA. (IEPA). To view a summary version of the completed Source Water Assessments, including: Importance of Source Water; Susceptibility to Contamination Determination; and documentation/recommendation of Source Water Protection Efforts, you may access the Illinois EPA website at <http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl>.

Source of Water: GREAT LAKES NAVAL TRAINING STATION

Susceptibility is defined as the likelihood for the source water(s) of a public water system to be contaminated at concentrations that would pose a concern. The IEPA considers all surface water sources of community water supply to be susceptible to potential pollution problems. The very nature of surface water allows contaminants to migrate into the intake with no protection only dilution, which is the reason for mandatory treatment for all surface water supplies in Illinois. NSGL's intake has a low sensitivity and therefore greater protection from shoreline contaminants due to mixing and dilution.

Although there are no potential sources within NSGL's critical assessment zone, there are several within the immediate source water area. Also, the combination of the land use, the proximity of storm sewer outfalls, Pettibone Creek and NSSD pumping stations add to the susceptibility of this intake. However, it should be stressed that treatment employed by NSGL is protective of their consumers, as noted by the facility's finished water history.

## Contaminant Sources

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban 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 can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. More information about contaminants and potential health effects can be obtained by calling the EPAs Safe Drinking Water Hotline at (800) 426-4791.

## Additional Information

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).

## Notice of Violation Information

On November 1, 2022 our system received a Notice of Violation (NOV) for Failure to Correct a Significant Deficiency Within Required Time Frame.

As our customers, you have a right to know what happened and what we are doing to correct this situation. A routine inspection conducted by the USEPA found structural deterioration and areas of low water flow in our clearwell tank at the treatment plant. The EPA classifies these findings as significant deficiencies. Because we could not identify an exact timeframe for correction of these deficiencies, the EPA issued the NOV.

While not the case in this situation, inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

We have implemented temporary mitigation efforts and have increased sampling to ensure the water remains in compliance with all state and federal regulations. We also continue to consult the USEPA in the development of a corrective action plan and timeline. Basically, parts of our treatment plant infrastructure are aging, but the water quality still meets and/or exceeds EPA Standards. See the last page of this report for more information.