

**Naval Support Activity South Potomac
Naval Support Facility Dahlgren
Dahlgren, VA**

Virginia Public Water System: VA6099340

Your tap water meets all Environmental Protection Agency (EPA),
State of Virginia and Navy drinking water health standards.



Source: drinkingwaterfountain.co.uk

Annual Drinking Water Quality Report:

Naval Support Activity South Potomac is pleased to present the 2019 Naval Support Facility Dahlgren (NSFDL) annual water quality report, or Consumer Confidence Report (CCR), as required by the Safe Drinking Water Act (SDWA). This CCR includes testing performed between January 1 and December 31, 2019. **Testing indicates NSFDL's drinking water supply was in full compliance with federal and state of Virginia SDWA standards during 2019.** NSFDL is committed to providing high-quality, safe, and reliable drinking water service to you every day, while also working hard to provide details about where your water originates, what constituents it contains, and how it measures up to safe drinking water standards set by regulatory agencies. The 2019 drinking water monitoring schedule established by the Virginia Department of Health, included collection of routine monthly bacteria samples, annual nitrate/nitrite samples, and monitoring chlorine disinfectant residuals, disinfection byproducts, and the like.

Special Precautions and Health Information:

(Note: This statement is required by the Virginia Department of Health Waterworks Regulations and 1998 EPA CCR Rule.)

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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection

by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800) 426-4791.

Substances Expected to be in Drinking Water:

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 (800) 426-4791. <https://www.epa.gov/ccl/types-drinking-water-contaminants>

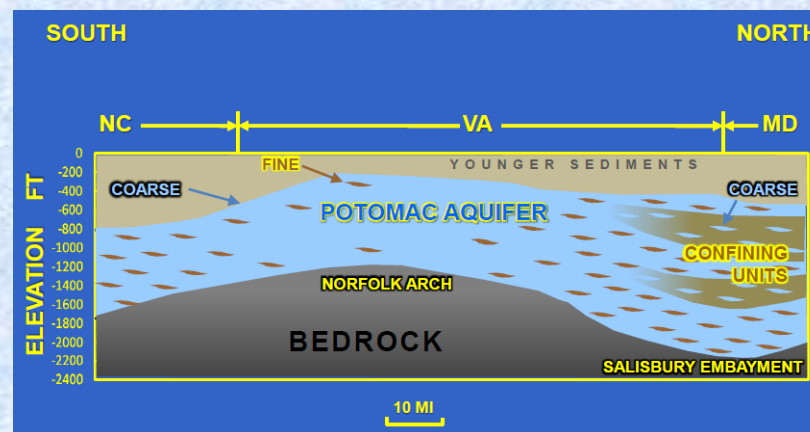
The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Potential contaminants that may be present in source water include: microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic

systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA developed regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Water Source Information:

Drinking water produced by NSFDL is comprised entirely of groundwater. No surface water enters the drinking water system. Water is pumped from 600 to 800 feet below ground from the Potomac Aquifer, which is a deep geologic feature that primarily recharges with the slow downward percolation of rainwater. This rate is so slow, that if rain fell today, it would take nearly one thousand years to reach the aquifer.

A system of three water wells, all located on the southern portion of NSFDL, are used to bring groundwater to the surface where it is treated by disinfection, pressurized or sent to water towers for storage, and distributed to NSFDL consumers. Disinfection of the groundwater is done by the addition of chlorine to kill any bacteria and microorganisms that may be in the water and it continues to disinfect water as it travels through pipes. Disinfection is considered one of the major public health advances of the 20th century. If you object to the chlorine taste of your tap water, try placing the water in an uncovered pitcher in the refrigerator overnight. This will reduce the chlorine taste.



The source of your drinking water is the Potomac Aquifer, Source: Randy McBride, US Geological Survey, [The Potomac Aquifer of the Virginia Coastal Plain](#)

Source Water Assessment and its Availability:

The Virginia Department of Health conducted a source water assessment of the NSFDL's drinking water system in April 2020 and determined it to be of high susceptibility to contamination based on using State-developed criteria in their approved Source Water Assessment Program. The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the five years prior. The report is available by contacting the NSFDL Public Works Drinking Water Program Manager at (540) 653-2341.

Note to Users of Infrequently Used Facilities:

Some of the NSFDL facilities have low or infrequent water use. To ensure that drinking water in these low-use facilities maintain proper chlorination, the Public Works Water Utilities operators regularly exercise the fire hydrants to keep chlorination levels elevated and fresh water moving through the system. First thing in the morning or after long periods without use, it may be desirable to allow fixtures to flow for a few minutes before water use. If you require assistance regarding infrequently used facilities, please call NSFDL Public Works Drinking Water Program Manager at (540) 653-2341.

Note to Sodium Sensitive Groups:

The drinking water at NSFDL contains levels of sodium that measured between 88.3 and 95.9 milligrams per liter (mg/L) in 2017. U.S. Department of Agriculture and the Department of Health and Human Services jointly publish the Dietary Guidelines for Americans every five years with the current version of the Guidelines being from 2015 and recommends individuals reduce daily sodium intake to less than 2,300 milligrams (mg). Each individual should always consult his or her health care provider before adopting any dietary regimen.

Additional Information for Lead:

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. <https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water>

The law currently allows end use fixtures, such as faucets, with less than 0.25% lead to be labeled as “lead free.” Visit the

National Sanitation Foundation (NSF) website to learn more about lead-containing plumbing fixtures.

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. Use water only from the cold-water tap for drinking, cooking, and especially making baby formula, as hot water may contain higher levels of lead. 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 at (800) 426-4791 or at <http://www.epa.gov/safewater/lead>.



Water Recycle Droplet. Source: ClipArt.com

Drinking Water Definitions

| Units | Definition |
|---------------------------|--|
| ppm | parts per million, or milligrams per liter (mg/L) |
| ppb | parts per billion, or micrograms per liter ($\mu\text{g/L}$) |
| pCi/L | picocuries per liter (a measure of radioactivity) |
| positive samples/month | Number of samples taken monthly that were found to be positive |
| % positive samples/month | Percent of samples taken monthly that were positive |
| NA | Not applicable |
| ND | Not detected |
| NR | Monitoring not required, but recommended |
| 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. |
| 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. |
| TT | Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water. |
| AL | Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. |
| Variations and Exemptions | State or EPA permission not to meet an MCL or a treatment technique under certain conditions. |
| MRDLG | Maximum residual disinfection level goal. 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 contaminants. |
| MRDL | Maximum residual disinfectant level. 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. |
| MNR | Monitored Not Regulated |
| MPL | State Assigned Maximum Permissible Level |

Table 1
Detected Contaminants

| Contaminants | MCLG or MRDLG | MCL, TT, or MRDL | NSFDL Water | | Range | | Sample Date | Violation | Typical Source |
|---|---------------|------------------|-------------|--------------------|--------------------|--|-------------|-----------|---|
| | | | | | Low | High | | | |
| Disinfectants & Disinfection By-Products | | | | | | | | | |
| Chlorine (as Cl ₂) (ppm) | 4 | 4 | 0.87 | | 0.04 | 2.12 | 2019 | No | Water additive used to control microbes |
| TTHMs [Total Trihalomethanes] (ppb) | NA | 80 | 11.0 | | ND | 11.0 | 2019 | No | By-product of drinking water disinfection |
| Inorganic Contaminants | | | | | | | | | |
| Copper - source water (ppm) | 1.3 | 1.3 | 0.015 | | ND | 0.015 | 2017 | No | Corrosion of household plumbing systems; Erosion of natural deposits |
| Fluoride (ppm) | 4 | 4 | 0.94 | | 0.92 | 0.98 | 2017 | No | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| Barium (ppm) | 2 | 2 | 0.0064 | | ND | 0.0064 | 2014 | No | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits |
| Radioactive Contaminants | | | | | | | | | |
| Alpha emitters (pCi/L) | 0 | 15 | 6 | | ND | 6 | 2014 | No | Erosion of natural deposits |
| Lead and Copper | | MCLG | AL | NSFDL Water | Sample Date | Typical Source | | | |
| Copper - action level at consumer taps (ppm) | | 1.3 | 1.3 | 0.21 | 2019 | Corrosion of household plumbing systems; Erosion of natural deposits | | | |
| Lead - action level at consumer taps (ppb) | | 0 | 15 | ND | 2019 | Corrosion of household plumbing systems; Erosion of natural deposits | | | |

Table 2
Additional Contaminants

In an effort to ensure the safest water possible the State required NSFDL to monitor some contaminants not required by Federal regulations. Of those contaminants only the ones listed below were found in your water.

| Contaminants | State MCL | NSFDL Water | Violation | Sample Date | Explanation and Comment |
|--------------|-----------|-------------|-----------|-------------|-----------------------------|
| Chloride | 250 ppm | 3.9 ppm | No | 2017 | Erosion of natural deposits |
| Sulfate | 250 ppm | 13 ppm | No | 2017 | Erosion of natural deposits |

Table 3
Undetected Contaminants

The following contaminants were monitored for, but not detected, in your water.

| Contaminants | MCLG or MRDLG | MCL, TT, or MRDL | NSFDL Water | Sample Date | Violation | Typical Source |
|---|---------------|------------------|-------------|-------------|-----------|---|
| Lead - source water (ppb) | 0 | 15 | ND | 2019 | No | Corrosion of household plumbing systems; Erosion of natural deposits |
| Nitrate [measured as Nitrogen] (ppm) | 10 | 10 | ND | 2019 | No | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Nitrite [measured as Nitrogen] (ppm) | 1 | 1 | ND | 2019 | No | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Haloacetic Acids (HAA5) (ppb) | NA | 60 | ND | 2019 | No | By-product of drinking water disinfection |
| Microbiological | | | | | | |
| Total Coliform (positive samples/month) | 0 | 1 | ND | 2019 | No | Naturally present in the environment |

Additional Tips to Use Less Water

| | | | |
|--|---|---|---|
|  Mulch plants to help them retain water |  Use a rain barrel to gather rainwater |  Soak pots and pans rather than letting water run |  Compost rather than use garbage disposal |
|  Turn off the water while washing your hands |  Wash clothes in cold water |  Join a community pool rather than installing one |  Limit showers to 5 minutes |
|  Turn off the faucet while brushing your teeth |  Use a refillable water bottle rather than multiple drinking glasses each day |  Wash fruits and vegetables over a pan to collect water |  Fix leaks as soon as they are discovered |
|  Take a shower rather than a bath |  Cook food in as little water as possible |  Run your dishwasher only when full |  Don't let the water run while shaving |
| Collect running water while waiting for it to heat up and use on plants or lawn |  Scrape dishes rather than rinsing before washing |  Add a nozzle to your hose to control flow |  Install a low flow shower head |



Additional Tips to Use less Water. Source: Expertise.com

What's New in the World of Water? PFAS:

Perfluorinated compounds or perfluoroalkyl substances (PFAS) are a class of man-made chemicals. PFAS have been used for many years to make products that resist heat, stains, grease and water. For example, PFAS may be used to keep food from sticking to cookware, to make sofas and carpets resistant to stains, to make clothes and mattresses more waterproof, and in some food packaging, as well as in some firefighting materials. Commercial and consumer products containing PFAS were first introduced in the 1940s. Within DON's operations, PFAS are most commonly associated with aqueous film-forming foam (AFFF) used primarily for firefighting, but can also be contained in some other materials (e.g., degreaser vapor suppression) and wastes/mixed wastes.

Since their introduction in the late 1940s, PFAS have entered and spread throughout the environment. Many PFAS, including PFOS and PFOA, breakdown very slowly in the environment and can travel long distances over time many people are concerned about the potential impacts of PFAS on human health. Research is currently ongoing to evaluate the potential health impacts of PFOS, PFOA, and other PFAS. In many animal studies, exposure to PFAS has been shown to cause changes in the function of the liver, thyroid, pancreas, and hormone levels. The impacts of PFAS in humans are less well understood and considered uncertain, though studies of exposed populations have shown possible links between PFAS and some harmful health effects.

3M® ceased manufacturing AFFF with PFOS (this formulation also included about 1-2% PFOA) in 2002. However, legacy 3M® AFFF remains in some DON systems and inventory. DON is in the process of identifying these locations

and preparing to remove this AFFF for proper disposal/destruction. AFFF produced after 2002 may also contain PFOA and/or precursor PFAS, which can degrade to PFOA. DON is in the process of testing the newest formulations of AFFF, which were developed to comply with the EPA 2010/2015 PFOA Stewardship Program, to verify whether there are trace amounts of PFOA and, if so, at what level. Once PFOA-level compliant formulations can be identified and certified to meet MILSPEC performance criteria, old stocks will be replaced with these newer formulations.

Currently, PFAS are classified as unregulated or "emerging" contaminants, which have no Safe Drinking Water Act (SWDA) regulatory standards or routine water quality testing requirements. PFAS are being studied by the EPA to determine if regulation is needed. On 19 May 2016, the EPA's Office of Water issued health advisory levels (HAs) for two PFAS, perfluorooctane sulfonate (PFOS) - Publication EPA 822-R-16-004 and perfluorooctanoic acid (PFOA) - EPA 822-R-16-005. Health advisory levels are not regulatory standards. They are health based concentrations above which the EPA recommends action should be taken to reduce exposure. The EPA HA levels are 0.07 parts per billion (ppb) for both PFOS and PFOA, individually or as the sum of the two.

Per EPA Unregulated Contaminant Monitoring Rule (UCMR3) requirements, Navy was required to sample at 17 installations and Marine Corps was required to sample at 7 installations within the United States. None of the systems exceeded the EPA Health Advisory (HA) for PFOS and PFOA. DON policy further required sampling at installations where there was a known or suspected release of PFAS with a potential to impact drinking water sources. This required Navy to sample

10 additional installations and Marine Corps to sample 1 additional installation within the United States. Only NALF Fentress had PFOA or PFOS detected above the EPA HA in drinking water and alternative water was immediately provided upon receipt of sample results. Earle Colts Neck (MSC Fire School) had PFAS detected in ground water monitoring wells associated with an environmental restoration site, but not in the Navy drinking water supply.

<https://www.secnav.navy.mil/eie/pages/pfas.aspx>

** The Naval Support Facility Dahlgren drinking water system sampled for PFAS in 2015 and 2016. In all samples, PFAS were not detected. Additional investigations and testing will continue and results reported to the consumers and in future CCRs**

Firefighters Using AFFF Foam



Source: civilian.exposure.org@civlianexposed

Home Filtration or Treatment Devices:

While the drinking water at NSFDL is safe to drink and complies with federal and state regulations, some individuals prefer to use an additional at-home or office filtration or treatment device. If you purchase a treatment device for private home use, we strongly recommend that it is maintained and that active

maintenance is provided according to the manufacturer's instructions. Failure to maintain the equipment properly may create the potential for contamination.

Water Conservation Tips:

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5-minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They are inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your washing machine and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.

- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Cross Connection Control Tips:

Drinking water normally flows from the source through the distribution (plumbing) system to the consumer. However, under certain conditions, contaminated water can flow in the reverse direction or “backflow” into the drinking water supply. The point at which this occurs is known as a cross connection. Cross connections can be either direct physical piping connections or potential connections such as garden hoses and faucets. Cross connections occur in many places throughout the distribution system. Examples of common cross connections in residences include dishwashers, garbage disposal units, hand-held showerheads, whirlpool tubs, toilets, faucets, and any unit onto which a hose may be attached. Common commercial/industrial cross connections occur at boiler units, fire sprinkler systems, and auxiliary water supply systems.

Backflow of potentially contaminated water is caused by a pressure differential--either back-siphonage or backpressure. Back-siphonage is the presence of a partial vacuum or lack of pressure in the supply line causing the contents further downstream to be siphoned or sucked back into the supply line. Back-siphonage may occur when the water pressure coming into your home suddenly drops due to a water main break, flushing, or pump failure. Back pressure occurs when there is greater pressure downstream (as caused by pumping, elevation, steam or air pressure) in the distribution system pushing contaminants back into the supply line. Backflow of contaminated water through unprotected cross connections has led to outbreaks of illness. Chemical and microbiological contaminants introduced

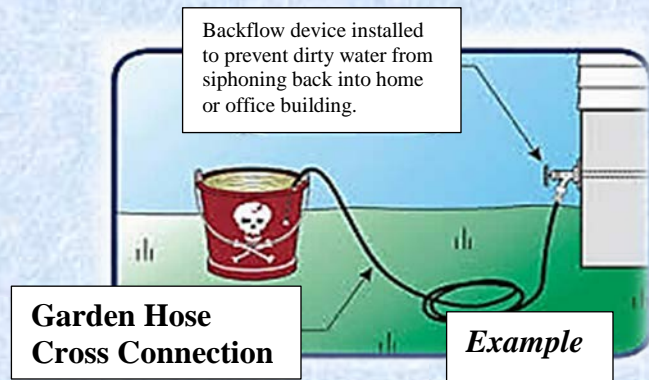
via backflow may have acute health effects including gastrointestinal illness, organ damage, and neurological effects such as blurred vision, headache, and paresthesia. Backflow is controlled by the use of backflow prevention (BFP) devices. There are numerous types of BFP devices, and applicability depends on the cross connection, water use, and plumbing structure. These devices are installed on the plumbing system or incorporated into the design of the plumbing fixture.

NSFDL is in accordance with applicable Federal and State laws and regulations, and has a program in place to control cross connection and prevent backflow of contamination into the drinking water supply. This program consists of routine surveys to identify and address actual and potential cross connection hazards and annual inspections of backflow prevention devices to ensure proper functioning. As consumers of the drinking water, all users play a vital role in protection of the drinking water supply. Here are some tips you can use to control cross connections and prevent backflow:

- Do not leave hoses submerged in buckets, sinks, puddles or other containment units.
- Do not use hoses to unclog blocked toilets, sewers, etc.
- Never install plumbing hardware onto the supply system without obtaining prior approval of the device(s) from the Navy’s Public Works Waterworks.
- Notify NSFDL Public Works Drinking Water Program Manager immediately if there is any indication or suspicion that contaminated water has entered the water supply system by backflow.

For more information or to report an issue regarding cross connection control and backflow prevention contact the

NSFDL Public Works Drinking Water Program Manager at (540) 653-2341.



Cross Garden Hose Connection. Source: Maury County Water System, Backflow Prevention

Water Quality Information:

In order to ensure that tap water is safe to drink, EPA require regulations, which limit the amount of contaminants in water provided by public water systems. Tables 1, 2 and 3 on the following pages list all of the drinking water contaminants detected during the calendar year of this report. Older data is included since the EPA or the state of Virginia 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 NSFDLs’ data, though representative, may be more than one-year-old. Although the Public Works Drinking

Water Program tested for many contaminants, only those listed in Table 1 and 2 were found in your water.

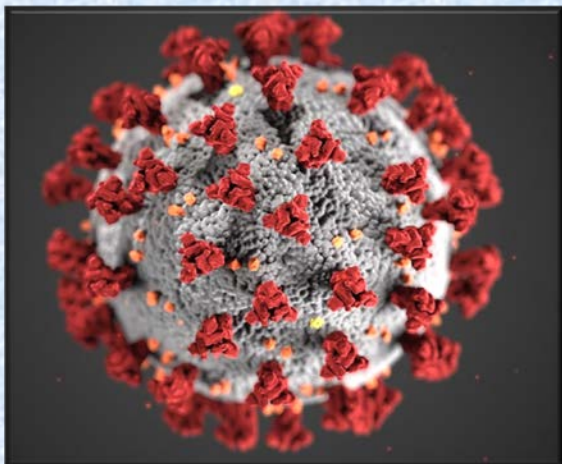
All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in NSFDL’s drinking water system. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels.

Within Table 1, 2 and 3 you may find terms and abbreviations that are familiar to you. To help you better understand these terms, NSFDL has provided a definitions chart.

COVID-19 Pandemic Drinking Water Emergency Action Plan

Effective: **April 10, 2020**

During the COVID-19 pandemic, namely while the installation is in HPCON-Charlie or HPCON-Delta status, drinking water staff are considered mission essential/critical personnel. Contingency plans shall be defined and utilized in the event operators cannot perform duties, supply lines are disrupted, or laboratory services are unavailable to ensure continuous operations of drinking water services. Drinking water operators shall employ all recommended routine safety and health procedures per Navy, EPA, OSHA and CDC guidelines.

Corona Virus*Source: National Park Service*

In preparation for the return of base personnel Public Works flushed the potable water distribution lines at NSF Dahlgren, on Friday, 19 June and Saturday, 20 June. After flushing, building occupants may notice discolored water from the tap or even small particles in the water that were dislodged during flushing of the lines. This is normal and is not dangerous to personnel. Let faucets run until it clears up, which should not take longer than two minutes.

Additional instructions will be given to building managers regarding flushing of their building's water lines in preparation for employees returning to the office.

Lead in Priority Areas:

Lead exposure from drinking water pipes, fittings or faucets is a particular concern for children. The EPA recommends schools and childcare facilities test the lead content of drinking water. The Navy adopted the recommendation as policy and tests the Dahlgren School, Child Development, Youth Activity and Teen Centers every five years.

Between August 10 and October 17, 2019, NSFDL tested 170 water outlets for lead in accordance with established sampling protocols. Of those outlets, six exceeded the EPA established 15 parts per billion (ppb) action level for lead. These outlets were seldom used sources of drinking water. Personnel removed or replaced each fixture that exceeded the 15 ppb level with a new lead-free fixture to ensure the safety of children and staff. NSFDL plans to complete sampling again in 2024 and will provide advance notification to parents, caregivers and staff. To learn more about lead in drinking water in schools and day care centers visit the following EPA website: <https://www.epa.gov/dwreginfo/lead-drinking-water-schools-and-child-care-facilities>.

**Utilities, water leaks, or related,
please contact:**

Utilities Branch Head
Mark Murphy, Utilities
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