

A close-up photograph of water being poured from a glass pitcher into a clear glass. The water is captured in mid-pour, creating a dynamic splash and bubbles. The background is a blurred wooden surface.

ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2018



Presented By
Town of Nags Head

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

Where Does My Water Come From?

Our drinking water is purchased from the Dare County Regional Water System. The two water treatment plants operated by Dare County process groundwater from wells located in the Upper and Middle Yorktown Aquifers. The groundwater from the Upper Yorktown Aquifer is processed from wells located in the Skyco area of Roanoke Island. The groundwater from the Mid Yorktown Aquifer is processed from wells located in Kill Devil Hills and Nags Head. In May 2017 Dare County began processing water with the nanofiltration treatment system at the Skyco plant in addition to the existing ion exchange treatment.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



Community Participation

We want our valued customers to be informed about their water utility. If you'd like to learn more, please attend any of our regularly scheduled meetings. The Town of Nags Head Board of Commissioners generally meets at 9 a.m. on the first Wednesday of the month. Mid-month meetings are held on the third Wednesday of each month at 5:30 p.m. October through March and 7:00 p.m. April through September. Meetings are held in the Board of Commissioners Meeting Room located at 5401 South Croatan Highway, Nags Head, North Carolina. For more information on meeting times, please contact Carolyn Morris, Town Clerk, at (252) 449-2009. You may view meeting schedules and minutes of past meetings at www.nagsheadnc.gov.

Lead in Home Plumbing

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 Town of Nags Head is responsible for providing high-quality drinking water, but 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Nancy Roop Carawan, Water Superintendent, at (252) 449-4210.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater 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.

We remain vigilant in delivering the best-quality drinking water

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BY THE NUMBERS

The number of Olympic-sized swimming pools it would take to fill up all of Earth's water. **800 TRILLION**

1¢ The average cost for about 5 gallons of water supplied to a home in the U.S.

The amount of Earth's water that is salty or otherwise undrinkable, or locked away and unavailable in ice caps and glaciers. **99%**

50 GALLONS The average daily number of gallons of total home water use for each person in the U.S.

The amount of Earth's surface that's covered by water. **71%**

330 MILLION The amount of water on Earth in cubic miles.

The amount of Earth's water that is available for all of humanity's needs. **1%**

75% The amount of the human brain that contains water.

Source Water Assessment

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to potential contaminant sources (PCSs). The results of the assessment are available in SWAP Reports that include maps, background information, and a relative susceptibility rating of Higher, Moderate, or Lower.

The relative susceptibility rating of each source for Dare County's water was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). It is important to understand that a susceptibility rating of Higher does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area. The assessment findings are summarized in the table below:

Susceptibility of sources to potential contaminant sources			
SOURCES	THE SOURCE WELL	SUSCEPTIBILITY RATING	SWAP REPORT DATE
NRO well	17	Lower	May 2017
Skyco wells	5, 13	Lower	May 2017
NRO wells	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15	Moderate	May 2017
Skyco wells	2, 4, 6, 7, 8, 10, 11, 14	Moderate	May 2017

The complete SWAP Assessment report may be viewed online at <https://www.ncwater.org/?page=600>. Note that because SWAP results and reports are periodically updated by PWS, the results available on this website may differ from the results that were available at the time this Consumer Confidence Report was prepared. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634 or email requests to swap@ncdenr.gov. Please indicate your system name and number and provide your name, mailing address, and phone number. If you have any questions about the SWAP report, please contact the source water assessment staff at (919) 707-9098.

Table Talk

Get the most out of the Testing Results data table with this simple suggestion. In less than a minute, you will know all there is to know about your water:

For each substance listed, compare the value in the Amount Detected column against the value in the MCL (or AL, SMCL) column. If the Amount Detected value is smaller, your water meets the health and safety standards set for the substance.

Other Table Information Worth Noting

Verify that there were no violations of the state and/or federal standards in the Violation column. If there was a violation, you will see a detailed description of the event in this report.

If there is an ND or a less-than symbol (<), that means that the substance was not detected (i.e., below the detectable limits of the testing equipment).

The Range column displays the lowest and highest sample readings. If there is an NA showing, that means only a single sample was taken to test for the substance (assuming there is a reported value in the Amount Detected column).

If there is sufficient evidence to indicate from where the substance originates, it will be listed under Typical Source.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Dare County participated in the fourth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on the drinking water. UCMR4 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water in order to determine if U.S. EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are available to the public, so please feel free to contact Dare County's Utilities Director at (252) 475-5606 if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES									
		Town of Nags Head				Dare County			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2018	[4]	[4]	1.01	0.88–1.14	0.68	0.27–0.91	No	Water additive used to control microbes
Fluoride (ppm)	2018	4	4	NA	NA	0.73	0.55–0.91	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2018	60	NA	4.5	2–7	2.2	ND–4.3	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	24	22–26	14.9	3.3–31.2	No	By-product of drinking water disinfection

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

		Town of Nags Head				Dare County			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2018	1.3	1.3	0.320	0/20	0.300	0/60	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2018	15	0	8	0/20	6	3/60	No	Lead service lines, corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection By-products Rule.

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 a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of 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.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

UNREGULATED CONTAMINANT MONITORING RULE PART 4 (UCMR4) - DARE COUNTY¹

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
1-Butanol (ppb)	2018	1.56	0.67–2	Underground gasoline storage tanks
2-Methoxyethanol (ppb)	2018	0.31	0.13–0.4	Underground gasoline storage tanks
2-Propen-1-ol (ppb)	2018	0.39	0.17–0.5	Underground gasoline storage tanks
Bromochloroacetic Acid (ppb)	2018	1.56	1.2–2.1	Disinfection by-product
Bromodichloroacetic Acid (ppb)	2018	1.95	1.8–2.3	Disinfection by-product
Butylated Hydroxyl Anisole (ppb)	2018	0.0095	0.0095–0.0095	Food preservative; Prescription drugs; Petroleum manufacturing
Chlorodibromoacetic Acid (ppb)	2018	1.95	1.7–2.3	Disinfection by-product
Dibromoacetic Acid (ppb)	2018	2.1	1.2–3.0	Disinfection by-product
Dichloroacetic Acid (ppb)	2018	1.12	0.88–1.5	Disinfection by-product
Germanium (ppb)	2018	0.10	0.10–0.10	Erosion
HAA5 (ppb)	2018	10.2	7.6–12.0	Disinfection by-product
Manganese (ppb)	2018	2.80	0.13–8	Erosion
Monobromoacetic Acid (ppb)	2018	0.54	0.31–0.74	Disinfection by-product
Monochloroacetic Acid (ppb)	2018	0.67	0.67–0.67	Disinfection by-product
Quinoline (ppb)	2018	0.0064	0.0064–0.0064	Underground coal
Tribromoacetic Acid (ppb)	2018	1.68	1.0–2.5	Disinfection by-product
Trichloroacetic Acid (ppb)	2018	0.86	0.73–1.2	Disinfection by-product
o-Toluidine (ppb)	2018	0.0022	0.0022–0.0022	Coal tar waste

¹ Unregulated contaminants are those for which U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.