Cape Fear Public Utility Authority
Stewardship. Sustainability. Service.

2015 WATER QUALITY report

ABOUT THIS REPORT

Each year, Cape Fear Public Utility Authority prepares a Drinking Water Quality Report for its customers as mandated by Federal law (1996 amendment to the Safe Drinking Water Act (SDWA). This report provides important details about the quality of the drinking water we provide to our community.

NO VIOLATIONS

We are pleased to report that during 2015 or during any compliance period ending in 2015 there were NO violations of drinking water standards.

EN ESPANOL

Este informe contiene informacion muy importante. Traduzcalo o hable con un amigo quien to entienda bien.

QUESTIONS? INFORMATION?

If you have any questions or concerns about this report or the quality of your drinking water, please contact CFPUA's Water Treatment Division at (910) 332-6739. We want our valued customers to be informed about their water utility. If you want to learn more, consider attending an Authority Board Meeting. The CFPUA Board meets on the 2nd Wednesday of each month at 9:00 a.m. in Room 601 of the New Hanover County Government Center.

A Message from the Executive Director:

In 2015, thanks to our professional and dedicated staff, CFPUA marked its seventh year of delivering reliable water and wastewater services that provide the backbone for our community's way of life. Every day we treat and distribute millions of gallons of life's most precious resource - clean, reliable drinking water - to nearly 200,000 people in the City of Wilmington and New Hanover County.

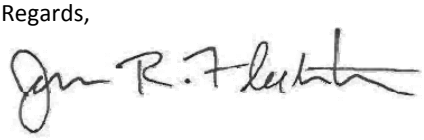
I am proud to present our annual Drinking Water Quality Report for the 2015 calendar year and encourage you to read it to learn more about the water being sent to your home, business, school, hospital or favorite restaurant. It details where your water comes from, how it's treated, and the degree that it is tested before it comes out of your tap.

Our laboratory conducts tens of thousands of tests every year to ensure the safety of your drinking water. This report provides an extensive list of what we test for in your water and information on how we meet or exceed the many drinking water regulations established by the state of North Carolina and the U.S. Environmental Protection Agency.

The people of Cape Fear Public Utility Authority will continue to work 24 hours a day with three guiding principles at the heart of everything that we do: **STEWARDSHIP** to the environment and community, **SUSTAINABILITY** of our infrastructure and operations, and the delivery of a high level of **SERVICE** at the lowest practical cost to our customers. We play an important role in the daily lives of the people we serve and we hope the results found in this report demonstrate to you, our customer, how seriously we take this responsibility.

As always, CFPUA staff will gladly speak with you and your neighbors about the results found in this water quality report. We welcome any available opportunity to talk to you about any issues of interest to your homeowners association, civic organization or community group. To set up such a conversation, please contact Mike McGill, Chief Communications Officer, at (910) 332-6704 or send an e-mail to mike.mcgill@cfpua.org.

Regards,



James R. Flechtner, P.E.
Executive Director
Cape Fear Public Utility Authority

Water quality data tables of detected substances

We routinely monitor for more than 150 substances in your drinking water according to Federal and State laws. The tables on the following pages list all the drinking water substances that CFPUA detected in the last round of sampling for the particular substance group. The presence of these substances does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in these tables is from testing done January 1 through December 31, 2015. The EPA and the State of North Carolina requires us to monitor for certain substances less than once per year because concentrations of these substances are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old. Unregulated substances are those for which the EPA has not established drinking water standards. The purpose of unregulated substance monitoring is to assist the EPA in determining the occurrence of unregulated substances in drinking water and whether future regulation is warranted. A glossary of terms used in these tables can be found on page 3 of this report.

CFPUA's Water Systems and Service Areas

When you turn on your tap, consider the source. Cape Fear Public Utility Authority processes and distributes treated drinking water within New Hanover County through four different water systems. The largest system **CFPUA/City (PWS #04-65-010)** distributes water within the City of Wilmington city limits, parts of the Ogden area, parts of Monkey Junction, King's Grant and Wrightsboro. Water is provided to the system by the Sweeney Water Treatment Plant, whose source water is surface water that is drawn from the Cape Fear River.

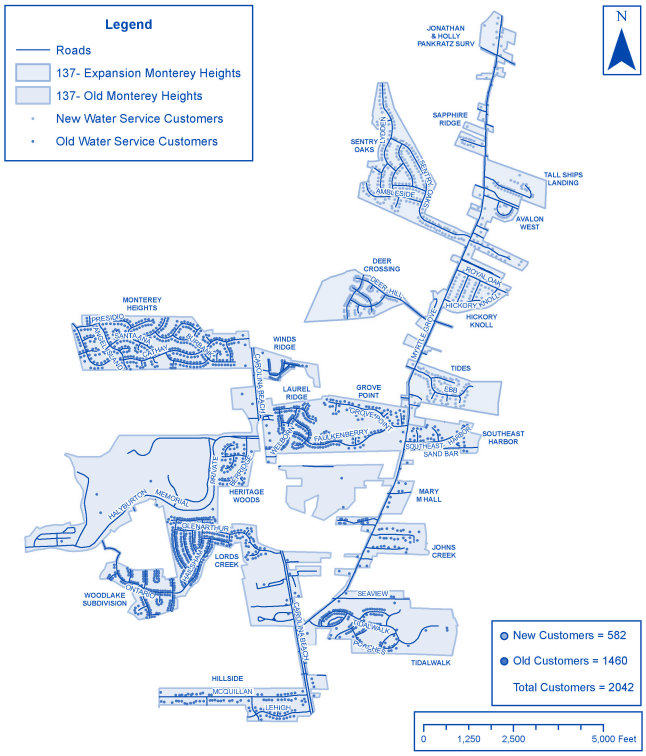
The next largest system **CFPUA/NHC (PWS #04-65-232)** distributes water to portions of the northern part of New Hanover County including Murrayville, parts of Castle Hayne, Porters Neck and parts of the Ogden Area. Water is provided to this system by the CFPUA Nano-filtration Membrane Facility whose source water is groundwater wells drawing from the Castle Hayne and Pee Dee Aquifers.

Two smaller systems **CFPUA/421 System (PWS #04-65-191),** distributing water in the Flemington area, and **CFPUA/Monterey Heights water system (PWS #04-65-137)**, *shown below,* distributing water in Monterey Heights, Woodlake, Laurel Ridge, Sentry Oaks, Deer Crossing, Lord's Creek, S. Myrtle Grove, and Veteran's Park area, provide treated groundwater from wells which draw water from the Castle Hayne and surficial aquifers.

A staff of highly trained, state certified water treatment operators and a team of skilled maintenance technicians keep all these facilities fully operational 24/7 to insure a safe, high quality, reliable drinking water source. Look through this report to learn more so you can make informed decisions about your drinking water and know the preventative measures taken to protect this valuable resource and ensure safe, clean drinking water.

Monterey Heights - System Switchover

In May 2015, some CFPUA customers in the southern part of the county experienced a switch in their water source. Neighborhoods in the Myrtle Grove Road area were switched from the CFPUA/City [PWS #04-65-010] water system with service coming from the Sweeney Water Treatment Plant located near downtown Wilmington, to the CFPUA/Monterey Heights [PWS #04-65-137] system, located just south of Monkey Junction near Veteran's Park. Although both systems meet or exceed state and federal drinking water standards, this switchover was made to maintain high drinking water quality as we improve operational efficiency and meet updated state regulations. Some of the communities affected by this change include: Sapphire Ridge, Sentry Oaks, Tall Ships Landing, Avalon West, Hickory Knoll, Deer Crossing, and Myrtle Grove Road.



The map to the left indicates the Monterey Heights water system service area. Customers affected by the switchover should refer to water quality data for the Sweeney Water Treatment Plant and the Monterey Heights water systems because they received water from both sources in 2015; data results can be found on pages 4-8 of this report. If you are unsure which system provides water to your home/business, or if you have questions about the system switchover, contact Mike McGill, Chief Communications Officer via email at mike.mcgill@cfpua.org or call him at 332-6704.

Customers in the Sentry Oaks and Deer Crossing neighborhoods may also have noticed a reduction in flushing in those areas. Because these two subdivisions were at the end of our Sweeney water system, a constant flushing regimen was necessary to maintain water quality. The switch in the source means that these communities will not need constant flushing because they will no longer be at the end of such a large water system. Occasional flushing will occur for overall system quality but it will not be needed on a regular basis.

Water now provided by the Monterey Heights system is served by groundwater wells drawing from the Castle Hayne and surficial aquifers and is slightly "harder" but not at a level where you should see any impact in your home. One significant change though is the fact that the Monterey Heights water is not fluoridated. It's recommended that you consult your dentist to determine if additional fluoride treatment is necessary.

What the EPA wants you to know...

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some natural substances. The presence of these substances does not necessarily indicate that water poses a health risk.

Some people may be more vulnerable to substances 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 microbiological substances are available from the Safe Drinking Water Hotline.

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. Substances that may be present in source water include **microbial substances**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wild-life; **inorganic substances**, 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 substances**, 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 substances**, which can be naturally-occurring or be the result of oil production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain substances in water provided by public water systems. FDA regulations establish limits for substances in bottled water that must provide the same protection for public health.

EPA
Safe Drinking Water Hotline
1-800-426-4791

Definitions

AL/Action Level = The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. The action levels are reported at the 90th percentile for homes at greatest risk. **Average** = Approximate or summary concentration, determined by dividing the total of all results by the number of analysis. **Locational Running Annual Average (LRAA)** = 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 Byproducts Rule. **MCL** (Maximum Contaminant Level)** = The highest level of a contaminant that is allowed in drinking water based on potential health effects. **MCLG (Maximum Contaminant Level Goal)** = The level of a contaminant in drinking water below which there is no known or expected risk to health. 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 Disinfection Level)** = the highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants. **MRDLG (Maximum Residual Disinfection Level Goal)** = The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants. **N/A** = Not applicable. **ND (Non-Detects)** = Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used. **NTU (Nephelometric Turbidity Unit)** = A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person. **pCi/L (Picocuries per liter)** = measures radioactivity in water. **PPM (parts per million)** or **Milligrams per liter (mg/L)** = One part per million corresponds to one minute in two years or a single penny in $10,000. **PPB (parts per billion)** or **Micrograms per liter (µg/L)** = One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000. **Range** = These are the lowest to the highest levels detected. **TT (Treatment Technique)** = A required process intended to reduce the level of contaminant in drinking water. **Turbidity MCL** = Less than 0.3 NTU's in 95% of all samples collected. ***MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.*

2014 ANNUAL WATER QUALITY REPORT

CFPUA/CITY – PWS ID #04-65-010 (Surface Water/Sweeney Water Treatment Plant)

Service to City of Wilmington, Ogden, Monkey Junction, Kings Grant

MICROBIOLOGICAL SUBSTANCES

Substance (units)	MCL Violation	Your Water	MCLG	MCL exceeded if:	Likely Source
Total Coliform Bacteria (presence or absence)	NO	1.28%	0	5% of monthly samples are positive	Naturally present in the environment
Fecal Coliform or E. coli (presence or absence)	NO	0	0	0 *(Note: The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive)*	Human and animal fecal waste

TURBIDITY * - Systems with population ≥ 10,000

Substance (units)	TT Violation	Your Water	MCLG	Treatment Technique (TT) Violation if:	Likely Source
Turbidity (NTU) *Highest single turbidity measurement*	NO	0.130	N/A	Turbidity > 1 NTU	Soil runoff
Turbidity (NTU) *Lowest monthly percentage (%) of samples meeting turbidity limits*	NO	100%	N/A	Less than 95% of monthly turbidity measurements are ≤ 0.3 NTU	

- Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU

INORGANIC SUBSTANCES

Substance (units)	Sample Date	MCL Violation	Your Water	Range Low	Range High	MCLG	MCL	Likely Source
Fluoride (ppm) Sweeney WTP surface water source	Nov 10, 2015	NO	0.72	N/A	N/A	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizers and aluminum factories

NITRATE / NITRITE SUBSTANCES

Substance (units)	Sample Date	MCL/MRDL Violation	Your Water (AVG)	Range Low	Range High	MCLG	MCL	Likely Source
Nitrate (ppm)	Apr 8, 2015	NO	0.72 mg/L	NA	NA	10	10	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits

LEAD AND COPPER † *(See page 10 for more information) Every three years with reduced monitoring. 2015 was not a compliance period.*

Substance (units)	Sample Date	Your Water	# of Sites Found Above the AL	MCLG	MCL	Likely Source
Copper (ppm) 90th percentile	June/Sept 2014	0.166 ppm	0	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) 90th percentile	June/Sept 2014	<3.0 ppb	0	0	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits

DISINFECTION BYPRODUCT PRECURSORS
Our water system used [Step 1] as the method to comply with the disinfectants/disinfectant byproducts treatment technique requirements

Substance (units)	MCL/TT Violation	Your Water *(RAA Removal Ratio)*	Range *Monthly Removal Ratio* Low	Range *Monthly Removal Ratio* High	MCLG	MCL	Likely Source
Total Organic Carbon (TOC) Removal Ratio - TREATED	NO	1.50	64%	78%	N/A	TT	Naturally present in the environment

Note: Depending on the TOC in our source water, the system MUST have a certain % removal of TOC or must achieve alternative compliance criteria. If we do not achieve that % removal, there is an alternative % removal. If we fail to meet the alternative % removal, we are in violation of a Treatment Technique (TT).Minimum % removal achieved was 64%.

TOC Removal Requirements

Source Water TOC (mg/L)	Source Water Alkalinity mg/L as CaCO3 (in percentages) 0-60	> 60 - 120	> 120
> 2.0 – 4.0	35.0	25.0	15.0
> 4.0 – 8.0	45.0	35.0	25.0
> 8.0	50.0	40.0	30.0

Our system monitored for the following water quality parameters and found no detected levels: Asbestos (7/15/2013), Volatile Organic Compounds (7/8/2015), Radiological Substances (12/10/2014), SOCs (4/13/2015 & 7/8/2015) and Cryptosporidium* (Monthly 2015).

***Cryptosporidium, or Crypto**, *is a microbial parasite which is found in surface water throughout the U.S. Although Crypto can be removed by filtration, the most commonly used filtration methods cannot guarantee 100 percent removal. Our facility utilizes a multi-barrier approach for removal;* **Ozone** *is used as a pre-oxidant and disinfectant in both pre and intermediate treatment of our water prior to filtration. Monitoring of our source water indicates the presence of these organisms; however, current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infections include nausea, diarrhea, and abdominal cramps. Most healthy individuals are able to overcome the disease within a few weeks; however, immuno-compromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to prevent infection. Cryptosporidium must be ingested for it to cause disease, and it may be spread through means other than drinking water.*

DISINFECTION BY-PRODUCT COMPLIANCE - based upon Locational Running Annual Average (LRAA)									
Disinfection By-product	Location Code	Year Sampled	MCL Violation	Your Water (Highest LRAA)	Range		MCLG	MCL	Likely Source
					Low	High			
TTHMs (ppb)	System	2015	NO	57.7	22.0	71.6	N/A	80	Byproduct of drinking water disinfection
	B01	2015	NO	47.6	36.0	60.5	N/A	80	Byproduct of drinking water disinfection
	B02	2015	NO	44.0	33.0	59.5	N/A	80	Byproduct of drinking water disinfection
	B03	2015	NO	40.4	32.0	52.9	N/A	80	Byproduct of drinking water disinfection
	B04	2015	NO	54.8	45.0	71.6	N/A	80	Byproduct of drinking water disinfection
	B05	2015	NO	35.3	22.0	44.6	N/A	80	Byproduct of drinking water disinfection
	B06	2015	NO	56.4	46.0	71.4	N/A	80	Byproduct of drinking water disinfection
	B07	2015	NO	57.7	52.0	65.4	N/A	80	Byproduct of drinking water disinfection
	B08	2015	NO	44.7	32.0	58.9	N/A	80	Byproduct of drinking water disinfection
HAAs (ppb)	System	2015	NO	26.5	8.0	36.0	N/A	60	Byproduct of drinking water disinfection
	B01	2015	NO	23.6	14.0	29.5	N/A	60	Byproduct of drinking water disinfection
	B02	2015	NO	22.0	14.0	29.8	N/A	60	Byproduct of drinking water disinfection
	B03	2015	NO	20.9	14.0	28.4	N/A	60	By-product of drinking water disinfection
	B04	2015	NO	21.0	8.0	27.0	N/A	60	By-product of drinking water disinfection
	B05	2015	NO	18.7	8.8	27.2	N/A	60	By-product of drinking water disinfection
	B06	2015	NO	26.5	18.0	30.2	N/A	60	By-product of drinking water disinfection
	B07	2015	NO	26.1	18.0	36.0	N/A	60	By-product of drinking water disinfection
	B08	2015	NO	22.1	14.0	28.8	N/A	60	By-product of drinking water disinfection

OTHER DISINFECTANTS/DISINFECTION BY-PRODUCTS - based upon Locational Running Annual Average (LRAA)								
Disinfection By-product	Sample Date	MCL/ MRDL	Your Water (Highest LRAA)	Range		MCLG	MCL	Likely Source
				Low	High			
Bromate (ppb)	Jan-Dec 2015	NO	0.5	1.0	2.2	0	10	By-product of drinking water disinfection
Chlorine (ppm)	Jan-Dec 2015	NO	1.12	0.21	2.24	MRDLG = 4	MRDL = 4	Water additive used to control microbes
Chlorite* (ppb)	Jan-Dec 2015	NO	1.9	<5.0	5.7	N/A	N/A	By-product of drinking water disinfection

* not yet regulated

WATER CHARACTERISTICS SUBSTANCES

Secondary Substances, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic substances normally do not have any health effects and normally do not affect the safety of your water.

Substance (units)	Sample Date	Your Water	Range Low/High	Secondary MCL
Sweeney WTP surface water source				
• Barium	Nov 10, 2015	<0.400	N/A	N/A
• Iron (ppm)	Nov 10, 2015	<0.060	N/A	0.3 mg/L
• Manganese (ppm)	Nov 10, 2015	<0.014	N/A	0.05 mg/L
• Nickel (ppm)	Nov 10, 2015	<0.100	N/A	N/A
• pH (s.u.)	Nov 10, 2015	7.0	N/A	6.5 to 8.5
• Sodium (ppm)	Nov 10, 2015	30.0	N/A	N/A
• Sulfate (ppm)	Nov 10, 2015	44.0	N/A	250 mg/L

CFPUA/NHC - PWS ID #04-65-232 (Groundwater/Nano-filtration)

Service to Northern New Hanover County, Ogden, Porters Neck, Murrayville, Wrightsboro, Castle Hayne

MICROBIOLOGICAL SUBSTANCES					
Substance (units)	MCL Violation	Your Water	MCLG	MCL exceeded if:	Likely Source
Total Coliform Bacteria (presence or absence)	NO	480 tested / 3 positive	0	5% of monthly samples are positive	Naturally present in the environment
Fecal Coliform or E. coli (presence or absence)	N/A	0	0	0 *(Note: The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive)*	Human and animal fecal waste

INORGANIC SUBSTANCES								
Substance (units)	Sample Date	MCL Violation	Your Water	Range		MCLG	MCL	Likely Source
				Low	High			
Fluoride (ppm)	Dec.8, 2015	NO	0.72	N/A	N/A	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizers and aluminum factories

LEAD AND COPPER † *(See page 10 for more information)*						
Substance (units)	Sample Date	Your Water	# of Sites Found Above the AL	MCLG	MCL	Likely Source
Copper (ppm) 90th percentile	June-Sept 2013	0.31	0	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) 90th percentile	June-Sept 2013	ND	0	0	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits

RADIOLOGICAL SUBSTANCES **Note: The MCL for beta particles is 4 mrem/year. EPA considers 50pCi/L to be the level of concern for beta particles.*						
Substance (units)	Sample Date	MCL Violation	Your Water	MCLG	MCL	Likely Source
Gross Beta (pCi/L)	Sept 2010	NO	ND	0	*50	Decay of natural and man-made deposits
Combined Uranium (pCi/L)	Sept 2010	NO	ND	0	20.1	Erosion of natural deposits
Uranium (pCi/L)	Sept 2010	NO	ND	0	20.1	Erosion of natural deposits

DISINFECTION BY-PRODUCT COMPLIANCE - based upon Locational Running Annual Average (LRAA)									
Disinfection By-product	Location Code	Year Sampled	MCL Violation	Your Water (Highest LRAA)	Range		MCLG	MCL	Likely Source
					Low	High			
TTHMs (ppb)	System	2015	NO	35.0	17.0	43.0	N/A	80	Byproduct of drinking water disinfection
	B01	2015	NO	22.0	18..0	25.0	N/A	80	Byproduct of drinking water disinfection
	B02	2015	NO	23.0	17.0	30.0	N/A	80	Byproduct of drinking water disinfection
	B03	2015	NO	27.0	22.0	31.0	N/A	80	Byproduct of drinking water disinfection
	B04	2015	NO	35.0	25.0	43.0	N/A	80	Byproduct of drinking water disinfection
HAAs (ppb)	System	2015	NO	20.0	9.0	24.0	N/A	60	Byproduct of drinking water disinfection
	B01	2015	NO	13.0	9.0	17.0	N/A	60	Byproduct of drinking water disinfection
	B02	2015	NO	14.0	10.0	20.0	N/A	60	Byproduct of drinking water disinfection
	B03	2015	NO	16.0	12.0	24.0	N/A	60	By-product of drinking water disinfection
	B04	2015	NO	20.0	16.0	23.0	N/A	60	By-product of drinking water disinfection

DISINFECTANTS AND DISINFECTION BYPRODUCTS (STAGE 2)								
Substance (units)	Sample Date	MCL/MRDL Violation	Your Water (AVG)	Range		MCLG	MCL	Likely Source
				Low	High			
Chlorine (ppm)	Jan-Dec 2015	NO	1.23	0.40	1.86	MRDLG = 4	MRDL = 4	Water additive used to control microbes

WATER CHARACTERISTICS SUBSTANCES

Secondary Substances, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic substances normally do not have any health effects and normally do not affect the safety of your water.

Substance (units)	Sample Date	Your Water	Range Low/High	Secondary MCL
Iron (ppm)	Dec 2015	0.106	N/A	0.3
Manganese (ppm)	Dec 2015	ND	N/A	0.05
pH (s.u.)	Dec 2015	7.4	N/A	6.5 to 8.5
Sodium (ppm)	Dec 2015	11.0	N/A	N/A

CFPUA/MONTEREY HEIGHTS WATER SYSTEM - PWS ID #04-65-137 (Groundwater)

Service to Monterey Heights, Woodlake, Sentry Oaks, Laurel Ridge, S. Myrtle Grove, Lord's Creek, Veteran's Park

MICROBIOLOGICAL SUBSTANCES					
Substance (units)	MCL Violation	Your Water	MCLG	MCL exceeded if:	Likely Source
Total Coliform Bacteria (presence or absence)	NO	108 tested / 0 positive	0	More than 1 sample a month is positive	Naturally present in the environment
Fecal Coliform or E. coli (presence or absence)	NO	0	0	0 *(Note: The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive)*	Human and animal fecal waste

INORGANIC SUBSTANCES								
Substance (units)	Sample Date	MCL Violation	Your Water	Range		MCLG	MCL	Likely Source
				Low	High			
Fluoride (ppm)	March 2013 & Sept 2014	NO	0.18	0.11	0.18	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizers and aluminum factories

LEAD AND COPPER † *(See page 10 for more information)*						
Substance (units)	Sample Date	Your Water	# of Sites Found Above the AL	MCLG	MCL	Likely Source
Copper (ppm) 90th percentile	July-Dec 2013	0.481	0	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) 90th percentile	July-Dec 2013	3	0	0	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits

DISINFECTION BY-PRODUCT COMPLIANCE - based upon Locational Running Annual Average (LRAA)									
Disinfection By-product	Location Code	Year Sampled	MCL Violation	Your Water (Highest LRAA)	Range		MCLG	MCL	Likely Source
					Low	High			
TTHMs (ppb)	System	2015	NO	33.0	24.0	33.0	N/A	80	Byproduct of drinking water disinfection
	B01	2015	NO	33.0	N/A	N/A	N/A	80	Byproduct of drinking water disinfection
	B02	2015	NO	24.0	N/A	N/A	N/A	80	Byproduct of drinking water disinfection
HAAs (ppb)	System	2015	NO	17.0	14.0	17.0	N/A	60	Byproduct of drinking water disinfection
	B01	2015	NO	17.0	N/A	N/A	N/A	60	Byproduct of drinking water disinfection
	B02	2015	NO	14.0	N/A	N/A	N/A	60	Byproduct of drinking water disinfection

DISINFECTANTS AND DISINFECTION BYPRODUCTS								
Substance (units)	Sample Date	MCL/MRDL Violation	Your Water (AVG)	Range		MCLG	MCL	Likely Source
				Low	High			
Chlorine (ppm)	Jan-Dec 2015	NO	1.05	0.28	1.98	MRDLG = 4	MRDL = 4	Water additive used to control microbes

WATER CHARACTERISTICS SUBSTANCES

Secondary Substances, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic substances normally do not have any health effects and normally do not affect the safety of your water.

Substance (units)	Sample Date	Your Water	Range Low/High	Secondary MCL
Iron (ppm)	Mar 2013 & Sept 2014	0.190	0.064 / 0.190	0.3
Manganese (ppm)	Mar 2013 & Sept 2014	0.019	ND / 0.019	0.05
pH (s.u.)	Mar 2013 & Sept 2014	8.1	7.6 / 8.1	6.5 to 8.5
Sodium (ppm)	Mar 2013 & Sept 2014	20.2	8.0 / 20.2	N/A

UNREGULATED INORGANIC SUBSTANCES					
Substance (units)	Sample Date	Your Water	Range		Secondary MCL
			Low	High	
Sulfate (ppm)	Mar 2013 & Sept 2014	8.5	ND	8.5	250 mg/L

CFPUA/421 WATER SYSTEM - PWS ID #04-65-191 (Groundwater)

Service to Flemington/Hwy. 421

MICROBIOLOGICAL SUBSTANCES					
Substance (units)	MCL Violation	Your Water	MCLG	MCL exceeded if:	Likely Source
Total Coliform Bacteria (presence or absence)	NO	24 tested / 0 positive	0	More than 1 sample a month is positive	Naturally present in the environment
Fecal Coliform or E. coli (presence or absence)	N/A	0	0	0 *(Note: The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive)*	Human and animal fecal waste

LEAD AND COPPER † *(See page 10 for more information)*						
Substance (units)	Sample Date	Your Water	# of Sites Found Above the AL	MCLG	MCL	Likely Source
Copper (ppm) 90th percentile	June-Sept 2015	ND	0	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) 90th percentile	June-Sept 2015	ND	0	0	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits

NITRATE/NITRITE SUBSTANCES								
Substance (units)	Sample Date	MCL/MRDL Violation	Your Water (AVG)	Range		MCLG	MCL	Likely Source
				Low	High			
Nitrate-*as Nitrogen* (ppm)	Feb 2015	NO	1.40	N/A	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits

DISINFECTION BY-PRODUCT COMPLIANCE - based upon Locational Running Annual Average (LRAA)								
Disinfection By-product	Location Code	Year Sampled	MCL Violation	Your Water (Highest LRAA)	Range		MCLG	MCL	Likely Source
					Low	High			
TTHMs (ppb)	System	2015	NO	9.0	N/A	N/A	N/A	80	Byproduct of drinking water disinfection
	B01	2015	NO	9.0	N/A	N/A	N/A	80	Byproduct of drinking water disinfection
HAAs (ppb)	System	2015	NO	3.0	N/A	N/A	N/A	60	Byproduct of drinking water disinfection
	B01	2015	NO	3.0	N/A	N/A	N/A	60	Byproduct of drinking water disinfection

DISINFECTANTS AND DISINFECTION BYPRODUCTS								
Substance (units)	Sample Date	MCL/ MRDL Violation	Your Water (AVG)	Range		MCLG	MCL	Likely Source
				Low	High			
Chlorine (ppm)	Jan-Dec 2015	NO	1.37	0.78	2.22	MRDLG = 4	MRDL = 4	Water additive used to control microbes

WATER CHARACTERISTICS SUBSTANCES

Secondary Substances, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic substances normally do not have any health effects and normally do not affect the safety of your water.

Substance (units)	Sample Date	Your Water	Range	Secondary MCL
Manganese (ppm)	Feb 2013	0.071	N/A	0.05
pH (s.u.)	Feb 2013	7.0	N/A	6.5 to 8.5
Sodium (ppm)	Feb 2013	22.5	N/A	N/A

UNREGULATED INORGANIC SUBSTANCES					
Substance (units)	Sample Date	Your Water	Range		Secondary MCL
			Low	High	
Sulfate (ppm)	Feb 2013	28.3	ND	28.3	250 mg/L

Irrigation System Users, Help Us Keep Your Water Safe!

Make sure your system's backflow prevention assembly is ready to work. Backflow prevention assemblies (backflow preventers) are mechanical devices that prevent water from flowing backwards from a potentially contaminated source into the public water supply. They help keep your water safe to drink.

All residential homes with lawn irrigation systems are required to have a backflow preventer because water can be siphoned from the yard into the public water supply if pressure is lost on the water main serving your home. In addition to irrigation systems, commercial businesses and industries such as schools, hospitals, and restaurants are also required to have backflow preventers to protect the public water supply from cross contamination.

Like any mechanical device, a backflow preventer is subject to failure. Current regulations require backflow preventers to be tested annually by a certified tester to ensure that they are functioning properly. A list of certified backflow preventer testers can be found on our website at www.cfpua.org (search "backflow preventer").

For more information about backflow prevention, contact CFPUA's Environmental Compliance section at 332-6558 or send an e-mail inquiry to community.compliance@cfpua.org.

"All residential homes with lawn irrigation systems are required to have a backflow preventer"

Source Water Assessment Program

The NC 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 Contamination Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of higher, moderate or lower. The complete SWAP Assessment report for the Cape Fear Public Utility Authority may be viewed at: http://www.ncwater.org/pws/swap

Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this water quality report was prepared. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program - Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email request to: swap@ncdenr.gov. Please indicate your system name, PWSID, 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 by phone at 919-707-9098.

Susceptibility of Sources to Potential Sources (PCSs)

It is important to understand that a susceptibility rating of "higher" does not imply poor water quality,

Source Name	Source Status	System Name	Susceptibility Rating*	SWAP Report Date
NHC 421 Well #3	Active	04-65-191	Higher	July 2015
NHC 421 Well #4	Active	04-65-191	Higher	July 2015
Monterey Heights Well #1	Active	04-65-137	Higher	July 2015
Monterey Heights Well #2	Active	04-65-137	Moderate	July 2015
Monterey Heights Well #3	Active	04-65-137	Higher	July 2015
Monterey Heights/Lord's Creek Well #4	Active	04-65-137	Lower	July 2015
Well A - Castle Hayne	Active	04-65-232	Higher	July 2015
Well A - Pee Dee	Active	04-65-232	Higher	July 2015
Well B - Castle Hayne	Active	04-65-232	Higher	July 2015
Well B - Pee Dee	Active	04-65-232	Higher	July 2015
Well C - Castle Hayne	Active	04-65-232	Higher	July 2015
Well C - Pee Dee	Active	04-65-232	Higher	July 2015
Well F - Castle Hayne	Active	04-65-232	Lower	July 2015
Well F - Pee Dee	Active	04-65-232	Lower	July 2015
Well G - Castle Hayne	Active	04-65-232	Moderate	July 2015
Well G - Pee Dee	Active	04-65-232	Moderate	July 2015
Well H - Castle Hayne	Active	04-65-232	Moderate	July 2015
Well H - Pee Dee	Active	04-65-232	Moderate	July 2015
Well I - Castle Hayne	Active	04-65-232	Moderate	July 2015
Well I - Pee Dee	Active	04-65-232	Moderate	July 2015
Well J - Castle Hayne	Active	04-65-232	Moderate	July 2015
Well J - Pee Dee	Active	04-65-232	Moderate	July 2015
Well K - Castle Hayne	Active	04-65-232	Higher	July 2015
Well K - Pee Dee	Active	04-65-232	Higher	July 2015
Well L - Castle Hayne	Active	04-65-232	Moderate	July 2015
Well L - Pee Dee	Active	04-65-232	Higher	July 2015
Well #28 M	Active	04-65-232	Higher	July 2015
Well #29 N	Active	04-65-232	Higher	July 2015
Well # 30 O	Active	04-65-232	Higher	July 2015

Source Water Assessment Program cont'd.

Source Name	Source Status	System Name	Susceptibility Rating*	SWAP Report Date
Well P - Pee Dee	Active	04-65-232	Moderate	July 2015
Well Q - Pee Dee	Active	04-65-232	Higher	July 2015
Well #4 White Rd.	Emergency	04-65-232	Moderate	July 2015
Well #15 Elkmont	Emergency	04-65-232	Moderate	July 2015
Well #20 Old Marsh Oaks #2	Emergency	04-65-232	Higher	July 2015
Cape Fear River Kings Bluff	Active	04-65-010	Moderate	July 2015
Lower Cape Fear WSA-KIN	Active	04-65-010	Moderate	July 2015
Masonboro Forest	Emergency	04-65-010	Lower	July 2015
Sea Pines	Emergency	04-65-010	Moderate	July 2015
Sea Spray Rd.	Emergency	04-65-010	Higher	July 2015

Wellhead Protection

Wellhead protection is simply protection of all or part of the area surrounding a well from which the well's ground water is drawn. Protecting your water from becoming contaminated is a wise investment in public health and your community's future. The 1986 amendments to the Safe Drinking Water Act established the wellhead protection program and requires each state to develop comprehensive programs to protect public water supply wells from contaminants that could be harmful to human health. Ground-water contamination can originate on the surface of the ground, in the ground above the water table, or in the ground below the water table. Where a contaminant originates is a factor that can affect its actual impact on ground-water quality. Because ground water is hidden from view, contamination can go undetected for years until the supply is tapped for use.

A wellhead protection program is a pollution prevention and management program used to protect underground sources of drinking water. These programs were intended by Congress to be a key part of a national groundwater protection strategy to prevent contamination of groundwaters that are used as public drinking water supplies. In North Carolina, development of a local Wellhead Protection Plan is not mandatory but, rather, is viewed as a valuable supplement to existing state groundwater protection programs. North Carolina's wellhead protection program is intended for city and county governments and water supply operators who wish to provide added protection to their local groundwater supplies. The Wellhead Protection Plan, once implemented, reduces (but does not eliminate) the susceptibility of wells to contaminants.

CFPUA has a state approved wellhead protection program. Our groundwater system, as well as our [main] surface water system, is continuously monitored and tested to ensure our customers receive the best quality of water possible. To learn more about wellhead protection and North Carolina's drinking water standards visit **www.ncwater.org**.

Well #MH1 - Cathay Road

Well Site K - Plantation Road

Porter's Neck Booster Station - Wild Dunes Circle

Thoughts About Flint:
How CFPUA's Water Quality Programs Protect Your Drinking Water

Like all professionals in the water industry, CFPUA has been keenly interested in the issues raised by the situation in Flint, Michigan. Delivering safe, clean drinking water is a public trust. As a result of that trust being shaken, customers across the country are understandably asking, "Can it happen here?"

Given what we know about the chain of events in Flint, as detailed in the Flint Water Advisory Task Force's report, we can state that our water treatment program keeps what occurred in Michigan from happening here. The source water and water treatment choices made in Flint do not share any connection with how CFPUA conducts our operations and, unlike Flint, CFPUA does not have lead water mains in our drinking water system.

It is more than reasonable for you to expect information beyond a reassuring statement that your drinking water is safe. That's why we are taking this opportunity to inform you about our work to protect your drinking water from lead.

The heart of CFPUA's mission is to provide high quality service that protects public health. When it comes to protecting the public from lead, we completely fulfill our obligations under the U.S. EPA's Lead and Copper Rule. The Rule requires that drinking water served by community public water systems (like CFPUA's) be non-corrosive and confirmed as such by testing conducted at customer taps and other locations throughout each system.

The EPA's Lead and Copper Rule also discusses how to provide optimum corrosion control treatment to prevent lead from leaching into the drinking water. CFPUA provides a high level of corrosion control treatment through a program that greatly reduces the likelihood that lead could leach into your water. Ortho-phosphate, a safe and effective corrosion control additive, is used by CFPUA at our water treatment plants. It provides you with a proven barrier to corrosion in lead pipes or fixtures, if they exist in your home.

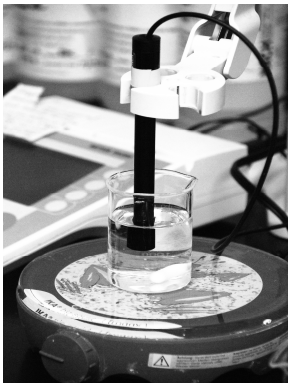
Having a proven, effective treatment program is not enough. CFPUA staff, along with many important volunteers throughout our service area, test our drinking water for lead in a set, regulated manner. Because of their efforts, we are able to confirm the effectiveness of our corrosion control program and the safety of the service we provide to you.

Based on a plumbing profile, specific homes and buildings are chosen to ensure the accuracy of the results. The results are reported to the homeowner, as well as state and federal regulators, for their review. Finally, CFPUA publicly reports our test results under the EPA's Lead and Copper Rule in our annual water quality report.

The Monterey Heights water system (PWS #04-65-137) does not use orthophosphate; however, the system does not have lead water mains and our water quality program tests for lead on a regular basis. Test results can be found on page 7 of this report.

For more information about CFPUA's water treatment process, including our efforts to protect our customers from lead through our corrosion control program, please contact Mike McGill, Chief Communications Officer, at 332-6704 or via e-mail at mike.mcgill@cfpua.org.

"The source water and water treatment choices made in Flint do not share any connection with how CFPUA conducts our operations and, unlike Flint, CFPUA does not have lead water mains in our drinking water system."



CFPUA conducts tens of thousands of tests every year to ensure the safety of your drinking water.

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†LEAD & COPPER

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 Cape Fear Public Utility Authority 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.

CFPUA
235 Government Center Dr.
Wilmington, NC 28403
(910) 332-6550
web-site: www.cfpua.org
e-mail: communications@cfpua.org

Pass it on…

Businesses and landlords are encouraged to share this information with their tenants and customers. Paper copies can be obtained by calling (910) 332-6739 or (910) 332-6550 during regular business hours. This report is available online at: **www.cfpua.org/2015 WQReport**.

Thank you for helping us provide this information to all those who use and depend on our water.

Keep up with the latest Authority news including meeting notices, road closure information, and scheduled & emergency work that affects our service area. Follow us on Twitter **@CFPUA** or friend us on Facebook (search Cape Fear Public Utility Authority).

AWWA MEMBER

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Cape Fear Public Utility Authority
Stewardship. Sustainability. Service.

Helpful CFPUA phone numbers…

Report Water/Sewer Emergencies (24-hour)	**332-6565**
Customer Service - Billing Information, New Connections, System Shutoff	**332-6550**
Water Treatment	**332-6739**
Human Resources	**332-6570**
Board Information	**332-6543**
Communications	**332-6704**
Community Compliance	**332-6558**

Having an Event? Sign up for CFPUA's FREE Portable Water Station!

Over the years, Cape Fear Public Utility Authority has supplied free water to a variety of community and charity events. In the past, we used cases of Cape Fear Clear, water from our award-winning Sweeney Water Treatment Plant that was bottled for convenience.

In 2015, due to the environmental impact and financial cost of using bottled water, CFPUA replaced the Cape Fear Clear with a portable water station that provides cold, refreshing water to community events, also for free. The only requirements? 1) The event must be in CFPUA's service area; and 2) the station must be staged within 100 feet of a fire hydrant or a hose bib. That's it; that's the list.

Last year, the station served several local events, including the Azalea Festival, the annual Earth Day celebration at Hugh McRae Park, and Maides Park's Fall Festival. The station has six fountains and a tube that enables people to quickly fill their water bottles. Step stools are provided so any kid can grab a drink when they're thirsty. We even bring a bowl for Fido.

The station's water is exactly the same water that comes out of your faucets at home. Depending on the location of the event, the water comes from one of our two state-of-the-art water treatment plants: our Sweeney plant and our Nanofiltration plant in Ogden. For the last seven consecutive years, CFPUA's water has received awards for its high quality.

To apply to use CFPUA's free portable water station, you just need go to our website at www.cfpua.org and click on the Portable Water Station link on our home-page. Once there, you will find an application with directions on how to reserve the station for your event. Requests to use the water station are granted on a first-come, first-served basis because CFPUA staff will operate the station during your event. If you have any questions, you are welcome to email Mike McGill, CFPUA's Chief Communications Officer, for more information at mike.mcgill@cfpua.org or call him at 332-6704.

Water Plant Tours Available

Have you ever wondered where your water comes from or how it gets to the tap? Schedule a tour of the Sweeney Water Treatment Plant or Nanofiltration (Groundwater) Plant for your school group, boy/girl scout troop or other organization and we'll take you on a behind-the-scenes guided tour through the actual treatment process where you'll discover how your drinking water is collected, cleaned, and distributed.

For more information about touring our water treatment facilities contact Jacqueline Valade at 332-6579 or send an email to water.resources@cfpua.org. Enter "WT tour request" in the subject line.