



2016 Water Quality Report





A MESSAGE FROM THE DIRECTOR

We are pleased to again provide you an opportunity to review our annual Consumer Confidence Report (CCR) which offers details about the quality of this utility's potable water. This report is published in compliance with Federal legislation and for the most part reflects results of the sampling and testing we conducted between January 1, 2016 and December 31, 2016. Port St. Lucie Utility Systems is truly "Connected to the Community" in that we are dedicated to meeting the City's water demands for decades to come and to maintaining the health of our natural water resources.

The City purchased the 3,100-acre McCarty Ranch Preserve in 2012 and incorporated it into the city limits in 2013, with plans to use it primarily as a cyclic surface water treatment, storage, and recovery facility, in order to meet the drinking water needs of the projected growth in population in this city and its extended utility service area.

The Utility Systems Department plans to pump water out of the nearby C-23 Canal, and then store it in on-site reservoirs/lakes and treat it to drinking water standards to send out to the community and send the excess to deep aquifer storage and recovery wells (ASRs) during annual wet seasons. The stored water from the ASRs will then be recovered and combined with stored water in the reservoirs, treated to drinking water standards, and distributed for consumption during dry seasons.

The water treatment plant will encompass approximately 25 acres of property. The pipe work from the treatment plant connecting the ASR wells and reservoirs will be under ground. The existing lakes on the property will be converted to use as drinking water reservoirs.

In 2014, the City purchased an additional 1,944-acre property that is now known as McCarty Ranch Extension. An existing 150-acre, approximately 40-foot deep lake on this site will likely be used as a supplemental source of raw water for the future McCarty Ranch Preserve cyclic surface water treatment, storage, and recovery system.

McCarty Ranch Extension abuts the C-23 Canal, which makes it an ideal location for construction and operation of a water quality restoration project, often called "water farming." Construction is expected to begin at the end of 2017 on Area 1 of the Water Quality Restoration/Storage Project. Upon completion of all areas of this project, nearly 9 billion gallons of water will be kept from entering the North Fork of the St. Lucie River annually. This project will take approximately 1,871 acres of fallow citrus grove at the City's McCarty Ranch Preserve and McCarty Ranch Extension properties (totaling 5,100 acres combined) and convert it to a shallow water storage facility, consisting of 6 reservoirs, capable of receiving water diverted from the C-23 Canal, along with capturing an annual average of 53 inches of rain on the property, reducing the need to discharge.

More than 42.3 billion gallons of water flow annually into the North Fork of the St. Lucie River from the C-23 Canal. This project is anticipated to keep approximately 21 percent of C-23 Canal discharges from entering the North Fork. It will also remove an estimated 89,721 lbs. of Nitrogen and 18,471 lbs. of Phosphorus from the water entering the river annually.

Locally, Utility Systems has pursued several funding opportunities for this project. We were awarded \$200,000 from the South Florida Water Management District (SFWMD) Cooperative Funding Program for Area 1. This funding will cover construction-related costs between now and September 2018.

Port St. Lucie's City Council identified funding this project as their top priority for their 2017 Legislative Ask. City staff and Council members have traveled to Tallahassee a number of times to lobby for the funding of this project. The City Council is passionate about the health of our environment and we appreciate their ongoing support and help in educating lawmakers about the tremendous positive impacts this project will have.

This project is also expected to be supported by the State Appropriations Committee after being presented by Representative Gayle Harrell in Tallahassee in March 2017. Representative Harrell has also been extremely supportive of this project and has worked hard to bring it before the State Legislature.

We are excited to see this vision come to fruition as we move forward in our continuing efforts to ensure that Port St. Lucie is an environmental steward for this community.

If you need more information about this report or our services, please call (772) 873-6400.

Jesus A. Merejo

Director of Utility Systems and Special Projects

Where does our water come from?

The City's water supply comes from two independent sources, the shallow aquifer and the deeper Floridan aquifer. Raw water from the shallow aquifer, which is about 100 feet deep, is treated by an 8.0 million gallon per day lime softening facility. This process is a combination of pH adjustments with lime, coagulation with a polymer, multi-media filtration, and disinfection with chloramines. The deeper Floridan aquifer, which is about 1350 feet deep, is treated by an 11.15 million gallon per day and a 22.5 million gallon per day reverse osmosis facilities. Both finished waters are blended, pH adjusted, disinfected, and fluoride is added.

The sources of drinking water (both tap water and bottled water) includes 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 human activity.

Contaminants that may be present in the source water include:

Microbiological contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.



How safe is our water?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) 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 contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

In addition, if present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Port St. Lucie Utility Systems Department 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>.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

In 2016 the Florida Department of Environmental Protection (FDEP) performed a source water assessment of the City's water supply system to identify any potential sources of contamination in the vicinity of our wells. Seven potential sources of contamination that were identified for this system have a low susceptibility level. It should be noted that the potential sources of contamination identified by this assessment are just that: potential sources. All of Port St. Lucie's water supply facilities are regulated, and operate under stringent construction and maintenance standards to protect both human health and the environment. The purpose of FDEP conducting the source water assessments was to determine if any actions are needed to reduce current risks to avoid future problems. No actions were recommended. The assessment results are available on the FDEP Source Water Assessment and Protection Program website at www.dep.state.fl.us/swapp.

Water conservation tips

Conserving water not only helps you save money, but it also helps preserve our water resources for the use of generations to come. The power to conserve water continues to rest with each of us, young and old alike, so please share the following tips with your family members, friends, and neighbors.

- Avoid unnecessary toilet flushes. Dispose of tissues, insects, and other waste in the trash.
- Take a shower instead of a bath. You could save up to 25 gallons when taking a 10-min. shower with a low-flow shower head.
- Become a leak detective! Regularly check faucets, toilets, hose bibs and sprinklers for leaks and make necessary repairs. A slow drip can waste 20 or more gallons of water per day.
- Turn off the water while shaving, brushing your teeth, or washing your hands
- Soak dirty pots and pans instead of letting the water run while you scrape them.
- Get the most for your money and only run your automatic dishwasher when it's full. Dishwashers use about 15 gallons of water during every cycle, regardless of how many dishes and glasses are loaded into it.
- Use mulch in plant beds to retain moisture, reduce evaporation, and discourage weeds that compete with plants for water.
- Always follow the Water Use Restrictions imposed by South Florida Water Management District for landscape irrigation days and times.

Additional water conservation tips and information about the importance of water conservation can be found at the following sites: www.cityofpsl.com, <http://my.sfwmd.gov>, or <http://www.epa.gov/watersense>.

Environmental Protection: Preventing Urban Storm Water Runoff Pollution

- Use fertilizers sparingly and keep it off driveways, sidewalks, and roads.
- Never dump anything down the storm drains.
- Compost your yard waste.
- Avoid pesticides; learn about Integrated Pest Management. (IPM)
- Pick up after your pet.

For more information of how you can minimize urban stormwater runoff pollution, go to the following link. <http://www.cityofpsl.com/npdes/combating-pollution.html>

Cross Connection Control: Protecting our water

There are over 70,000 connections to our water distribution system. When connections are properly installed and maintained, the risks of contamination are very minimal. However, unapproved and improper piping changes or connections can adversely affect not only the availability, but also the quality of the water. A cross connection may let polluted water or even chemicals mingle into the water supply system when not properly protected. This not only compromises the water quality, it can also affect your health.

So, what can you do? Do not make or allow improper connections at your home. An unprotected garden hose lying in a puddle is a cross connection. The unprotected lawn sprinkler system after you have watered is also a cross connection. Also, residents in neighborhoods utilizing reclaimed water for irrigation must take precautions to prevent cross connections. Reclaimed water is not suitable for potable use and must not be connected to household plumbing. When the cross connection is allowed to exist at your home it will affect you and your family first. **If you'd like to learn more about helping to protect the quality of drinking water, call us at 1-772-873-6400 for further information about ways you can help.**



Important Definitions

Maximum Contaminant Level or MCL: 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.

Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

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

Initial Distribution System Evaluation (IDSE): An important part of the Stage 2 Disinfection Byproducts Rule (DBPR). The IDSE is a one-time study conducted by water systems to identify distribution system locations with high concentrations of trihalo-methanes (THM) and haloacetic acids (HAA). Water systems will use results from the IDSE, in conjunction with their Stage 1 DBPR compliance monitoring data, to select compliance monitoring locations for the Stage 2 DBPR.

Maximum residual disinfectant level or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of disinfectant is necessary for control of microbial contaminants.

Maximum residual disinfectant level goal or MRDLG: The level of 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.

“ND” means not detected and indicates that the substance was not found by laboratory analysis.

Parts per billion (ppb) or Micrograms per liter (ug/l) – one part by weight of analyte to 1 billion parts by weight of the water sample.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part by weight of analyte to 1 million parts by weight of the water sample.

Picocurie per liter (pCi/L): measure of the radioactivity in water.

Lead and Copper Results

These results are for the distribution system

Contaminant and Unit of Measurement	Dates of Sampling (mo/yr)	AL Violation Y/N	90th Percentile Result	# of Sites Exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Copper (tap water) (ppm)	6,7/2016	N	0.12	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	6,7/2016	N	4.8	0	0	15	Corrosion of household plumbing systems; erosion of natural deposits

Disinfectants and Disinfection By-Products

These results are for the distribution system

Contaminant and Unit of Measurement	Dates of Sampling (mo/yr)	MCL Violation Y/N	Level Detected *	Range of Results	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
Chloramines (ppm)	1-12/2016	N	2.93	2.7 - 3.1	MRDLG = 4	MRDL = 4.0	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	2, 5, 8, 11 2016	N	15.0	1.0 - 28.1	N/A	MCL = 60	By-product of drinking water disinfection
THM (Total trihalo-methanes) (ppb)	2, 5, 8, 11 2016	N	28.3	1.1 - 57.7	N/A	MCL = 80	By-product of drinking water disinfection

* Results in the Level Detected column for radiological contaminants, inorganic contaminants, synthetic organic contaminants including pesticides and herbicides, and volatile organic contaminants are the highest average at any of the sampling points or the highest detected level at any sampling point, depending on the sampling frequency. For THM's and HAA's, the "level detected" is the highest locational running annual average for the year.

TEST RESULTS TABLE For Prineville Water Treatment Plant

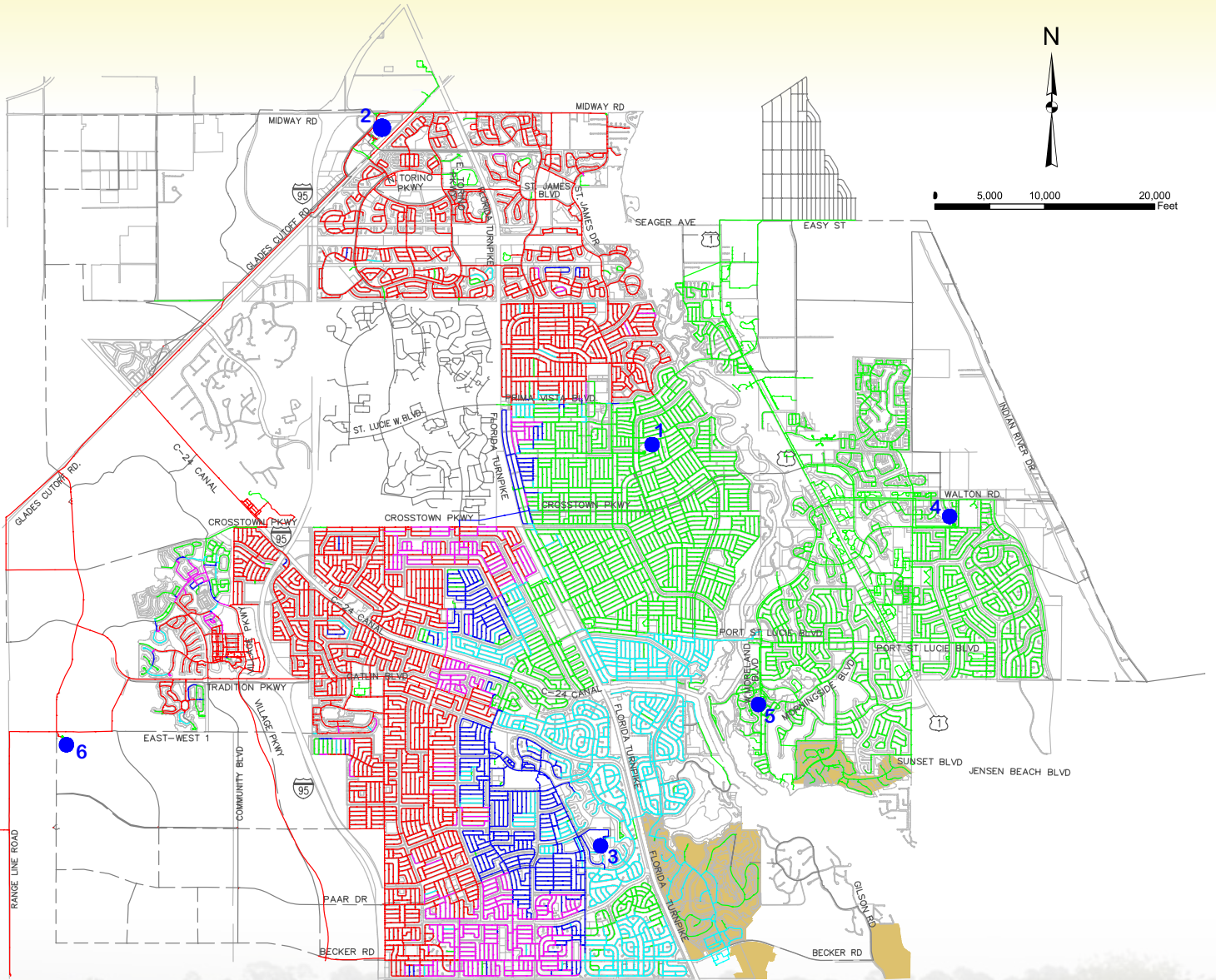
Contaminant and Unit of Measurement	Dates of Sampling (mo/yr)	MCL Violation Y/N	Level Detected *	Range of Results	MCLG	MCL	Likely Source of Contamination
INORGANIC CONTAMINANTS							
Fluoride (ppm)	4/2014	N	0.68	N/A	4	4	Erosion of natural deposits; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm
Sodium (ppm)	4/2014	N	89.3	N/A	N/A	160	Salt water intrusion; leaching from soil
Nitrate (ppm)	3/2016	N	0.035	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
RADIOLOGICAL CONTAMINANTS							
Radium 226 (pCi/L)	4/2008	N	0.3	N/A	0	5	Erosion of natural deposits

TEST RESULTS TABLE For James E. Anderson Water Treatment Plant

Contaminant and Unit of Measurement	Dates of Sampling (mo/yr)	MCL Violation Y/N	Level Detected *	Range of Results	MCLG	MCL	Likely Source of Contamination
INORGANIC CONTAMINANTS							
Fluoride (ppm)	4/2014	N	0.69	N/A	4	4	Erosion of natural deposits; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm
Sodium (ppm)	4/2014	N	95.8	N/A	N/A	160	Salt water intrusion; leaching from soil
Nitrate (ppm)	3/2016	N	0.031	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.



City of Port St. Lucie Utilities System Water Distribution Map



LEGEND

Water Source

- 1 - Prineville WTP
- 2 - JEA WTP
- 3 - Westport Repump
- 4 - Midport Repump
- 5 - Southport Repump
- 6 - Rangeline Repump

% JEA Water

- 0 - 20
- 20 - 40
- 40 - 60
- 60 - 80
- 80 - 100

Existing Reclaimed Water Service Area





City of Port St. Lucie

Utility Systems Department
900 S.E. Ogden Ln
Port St. Lucie, FL 34983

Place
Stamp
Here

CITY OF PORT ST. LUCIE LEADERSHIP

Gregory J. Oravec
Mayor

Stephanie Morgan
Councilwoman District 1

John Carvelli
Councilman District 2

Shannon M. Martin
Vice Mayor District 3

Jolien Caraballo
Councilwoman District 4

Russel "Russ" D. Blackburn
City Manager

Jesus A. Merejo
*Director of Utility Systems and
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