

Virgin Islands Water and Power Authority

Water Quality Report 2018



St. Croix

January 1, 2018 through December 31, 2018

Dear Water Distributors/Water Customers:

Water is life and a safe drinking water supply is your health. Knowing this, the Virgin Islands Water and Power Authority (VIWAPA) continues to dedicate its efforts in providing the people of the Virgin Islands with a safe and clean supply of drinking water. VIWAPA urges you to understand the importance of safe drinking water and learn about the quality of the water in your life. Therefore, this Water Quality Report or Consumer Confidence Report, is designed as a snapshot of the water quality delivered to you each day in 2018.

VIWAPA routinely monitors the drinking water produced through continuous testing and analyzing. The United States Environmental Protection Agency (USEPA), as authorized by the Safe Drinking Water Act (SDWA), mandates that this report shows the types and amounts of key contaminants in your water supply, their likely sources and the maximum contaminant level (MCL) that USEPA considers safe.

As part of our Strategic Plan for the Water System, VIWAPA is using federal grants from the USEPA to replace ductile iron pipes with distribution grade PVC pipes. This aged pipe infrastructure is beyond its service life. The installation of new pipes will help to improve the aesthetic qualities such as discoloration of the water delivered to our customers. Additionally, VIWAPA has enhanced its post treatment systems and begun to upgrade its chlorination units. These two major components are essential steps of VIWAPA's commitment with protecting our customers' health and water supply.

You can feel secure knowing that we take your water quality very seriously. VIWAPA is constantly working for you and is sincerely grateful for your support throughout the year.

Respectfully,

Noel Hodge

Chief Operating Officer-Water Systems

This report contains very important information about your drinking water. Please translate it or speak with someone who understands it.

Ce rapport contient des informations très importantes au sujet de votre eau potable. S'il vous plaît de le traduire ou de parler avec quelqu'un qui le comprend.

Este informe contiene información muy importante sobre su agua potable. Por favor, traducirlo o hablar con alguien que lo entienda.

WATER QUALITY DATA

DISINFECTANTS-CHLORINE RESIDUAL												
Monthly Ave. (ppm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	1.4	1.1	1.1	1.1	1.1	1.1	1.1	0.9	0.7	1.2	1.1	1.1
Quarterly Running Ave.	1.2			1.1			0.9			1.1		
Running Annual Ave. (RAA)	1.3			1.2			1.1			1.1		
MRDL	MRDLG			VIOLATION			LIKELY SOURCE					
4 as Cl2	4 as Cl2			No			Water additive used to control microbes					
<p>Note: Reported RAA for quarters 1-3 are based on results from previous quarters in 2017 not reported on the disinfectants table. St. Croix monitoring sites were included in the Disinfectants-Chlorine Residual calculations.</p>												

OCCURRENCE OF MICROBIOLOGICAL CONTAMINANTS (REVISED TOTAL COLIFORM RULE)		
CONTAMINANTS	HIGHEST # OF POSITIVE SAMPLES IN ANY ONE MONTH	TOTAL # OF POSITIVE SAMPLES FOR 2018
Total Coliform	0	0
<i>E. coli</i>	0	0

MICROBIOLOGICAL CONTAMINANTS (REVISED TOTAL COLIFORM RULE VIOLATIONS)				
CONTAMINANTS	MCL	NUMBER	VIOLATION	LIKELY SOURCE
<i>E. coli</i>	E. coli positive repeat following <i>E. coli</i> positive routine	0	0	Naturally present in the environment. Human and Animal waste.
	TC-positive repeat following <i>E. coli</i> positive routine	0	0	
	Failed to take required repeat samples following <i>E. coli</i> positive routine	0	0	
	Failed to test for <i>E. coli</i> when any repeat test positive for TC	0	0	

LEVEL 1 & LEVEL 2 ASSESSMENTS (REVISED TOTAL COLIFORM RULE)				
ASSESSMENT	NO. OF REQUIRED ASSESSMENTS	NO. OF COMPLETED ASSESSMENTS	NO. OF CORRECTIVE ACTIONS REQUIRED	NO. OF CORRECTIVE ACTIONS TAKEN
LEVEL 1	0	0	0	0
LEVEL 2	0	0	0	0

WATER QUALITY DATA

STAGE 2 DISINFECTANTS AND DISINFECTION BY-PRODUCTS RULE (DDBP)

Trihalomethanes and Haloacetic Acids are byproducts of disinfecting water with chlorine. Some people who drink water containing Trihalomethanes in excess of the highest allowed (MCL) over many years may experience problems with their liver, kidneys, or central nervous system and may have an increased risk of getting cancer.

Total Trihalomethanes (TTHM) (ppb)		1 st Quarter 2018 (Mar)	2 nd Quarter 2018 (May)	3 rd Quarter 2018 (Jul)	4 th Quarter 2018 (Oct)
Pearl B. Larsen		56.6	74.4	56.6	56.6
LRAA		59.83	70.9	65.3	61.1
Frederiksted Dock		2.8	3.6	2.5	2.5
LRAA		1.9	2.2	2.8	2.9
Airport		2.6	2.3	3.0	3.0
LRAA		2.7	2.8	2.6	2.7
Calquohoun		1.1	1.5	0.94	0.94
LRAA		0.48	0.7	0.89	1.1
RANGE	HIGHEST LRAA	MCL	MCLG	VIOLATION	LIKELY SOURCE
		80	N/A	No	Byproduct of drinking water disinfection

Haloacetic Acids (HAA5) (ppb)		1 st Quarter 2018 (Mar)	2 nd Quarter 2018 (May)	3 rd Quarter 2018 (Jul)	4 th Quarter 2018 (Oct)
Pearl B. Larsen		6.8	10.6	6.2	6.2
LRAA		6.1	7.6	7.3	7.5
Frederiksted Dock		0.82	0.67	0.90	0.90
LRAA		0.51	0.68	0.90	0.83
Airport		0.69	0.67	0.90	0.90
LRAA		0.45	0.62	0.84	0.79
Calquohoun		0.67	1.6	0.90	0.90
LRAA		0.42	0.83	1.0	1.0
RANGE	HIGHEST LRAA	MCL	MCLG	VIOLATION	LIKELY SOURCE
		60	N/A	No	Byproduct of drinking water disinfection

Note: Reported LRAA for quarters 1-3 are based on results from previous quarters in 2017 not reported on these tables.

WATER QUALITY DATA

INORGANIC CHEMICALS (IOC)							
Contaminant	Location	Units	Level Detected	MCL	MCLG	Violation	LIKELY SOURCE
Arsenic	St. Croix Entry	ppm	BDL	0.010	0	No	Naturally occurring in the environment. Byproducts of some agricultural and industrial activities.
Cyanide	St. Croix Entry	ppm	BDL	0.2	0.2	No	Runoff from fertilizer use, leaching from septic tanks, sewage, corrosion of natural products.
Fluoride	St. Croix Entry	ppm	BDL	4	4	No	Naturally occurring in the environment. Byproducts of some agricultural and industrial activities.
Nitrate	St. Croix Entry	ppm	BDL	10	10	No	Runoff from fertilizer use, leaching from septic tanks, sewage, corrosion of natural products.
Nitrite	St. Croix Entry	ppm	BDL	1	1	No	Runoff from fertilizer use, leaching from septic tanks, sewage, corrosion of natural products.

Note: VIWAPA-STX is on a reduced monitoring schedule of once every three (3) years for IOC. 2018 begins this once every three (3) years schedule. A total of fourteen (14) chemical contaminants were tested under IOC. All other results were Below Detection Limit (BDL).

VOLATILE ORGANIC CHEMICALS (VOC)							
Contaminant	Location	Units	Level Detected	MCL	MCLG	Violation	LIKELY SOURCE
21 Regulated VOCs	St. Croix Entry	ppm	BDL	-	-	No	Naturally occurring in the environment. Byproducts of some agricultural and industrial activities

Note: VIWAPA-STX has returned to a monitoring schedule of once every three (3) years for VOC. 2018 begins this once every three (3) years schedule. The twenty-one (21) regulated VOCs contaminants were tested. All results were Below Detection Limit (BDL).

WATER QUALITY DATA

LEAD AND COPPER						
MONITORING PERIOD	CONTAMINANT	AL (ppm)	90 th PERCENTILE VALUE	RANGE	VIOLATION	LIKELY SOURCE
Aug - Sept 2018	Lead (Pb)	0.015	0.004	None	No	Corrosion of household plumbing systems; Erosion of natural deposits
	Copper (Cu)	1.3	0.058	None	No	

Note: VIWAPA-STX is on a reduced monitoring schedule of collecting thirty (30) samples annually between June and September for three (3) consecutive years. 2018 began the three (3) consecutive years schedule. Thirty (30) were collected on St. Croix.

LEAD AND 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. Public utilities are 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 the water for drinking and 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 (1-800-426-4791) or at <http://water.epa.gov/drink/info/lead/index.cfm>

TERMS DEFINED

90th Percentile Levels – The highest concentration of lead or copper in tap water that is exceeded by 10 percent of the sites sampled during a monitoring period. This value is compared to the lead action level (AL) to determine whether an AL has been exceeded.

Action Level (AL) – the concentration of a contaminant, which if exceeded, triggers treatment or other requirements.

EPA Goal/Maximum Contaminant Level Goal (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.

EPA Limit/ Maximum Contaminant Level (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 technology.

Maximum Residual Disinfection Level (MRDL) - means a level of disinfection added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects.

Maximum Residual Disinfection Level Goal (MRDLG) - means a level of disinfectant added for water treatment that may not be exceeded at the consumer tap.

Total Coliform Bacteria – Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful, bacteria may be present.

Fecal Coliform Bacteria/E. coli – Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short term effects such as diarrhea, cramps, nausea, headaches or other symptoms.

Non-applicable (N/A) - Not applicable.

Non-detected (N/D) - Not detected

BDL – Below detection limit.

Parts per billion (ppb) – one part per billion (micrograms per liter) corresponds to one minute in 2,000 years, or one penny in \$10 million.

Parts per million (ppm) – one part per million (milligrams per liter) corresponds to one minute in two years, or a single penny in \$10,000.

Curie - the curie (symbol Ci) is a non SI unit of radioactivity, defined as $1 \text{ Ci} = 3.7 \times 10^{10}$ decays per second.

PicoCurie – (pCi) 0.000,000,000,001 (one trillionth) of a Curie, an international measurement unit of radioactivity.

Million Fibers per Liter (mfl) - million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Treatment Technique (TT) – a treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

VIWAPA

The Virgin Islands Water and Power Authority (VIWAPA) is a publicly owned utility company, which produces and distributes electricity and potable water to the residents of the United States Virgin Islands. Operation of the Authority's water distribution systems and standpipes are done on St. Croix, St. Thomas, and St. John.

VIWAPA obtains water produced by Seven Seas Water from one source, seawater. As water travels over the land and into the sea or filters through the ground settling in aquifers, it dissolves naturally occurring minerals and can pick up contaminants resulting from the presence of animals or human activity.

REGULATING AGENCIES

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 mean that the water poses a health risk.

The Virgin Islands Department of Planning and Natural Resources (VIDPNR) and the United States Environmental Protection Agency (USEPA) ensures that potable water is safe to drink. Both agencies have prescribed limits on the contaminants in water provided by public water systems. VIDPNR has established the same criteria for contaminants in bottled water.

USEPA defines a water contaminant as any physical, chemical, biological, or radiological substance or matter in water. USEPA sets legal limits on the levels of certain contaminants in drinking water. The legal limits reflect both the level that protects human health and the level that water systems can achieve using the best available technology. Besides prescribing these legal limits, USEPA rules set water testing schedules and methods that water systems must follow. The rules also list acceptable techniques for treating contaminated water.

The Safe Drinking Water Act gives individual territories the opportunity to set and enforce their own drinking water standards if the standards are at least as strong as USEPA's national standards. Most territories directly oversee the water systems within their borders.

SPECIAL PRECAUTIONS

Some people are 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 for infections.

These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available for USEPA's Safe Drinking Water Hotline (1-800-426-4791) or EPA's website at www.epa.gov/safewater. More information about contaminants and potential health effects can also be obtained from the hotline or EPA's website.

Nitrate and Nitrite are nitrogen-oxygen chemical units which combine with various organic and inorganic compounds. Once taken into the body, nitrates are converted to nitrites. USEPA has set a MCL because the possible presence can pose a health risk for infants of less than six months of age. The MCL for nitrates has been set at 10ppm, and for nitrites at 1ppm. Excessive nitrate levels in drinking water can cause methemoglobinemia also called blue baby syndrome. If you are caring for an infant, you should ask for advice from your health care provider.

VI Water and Power Authority

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Please contact VIWAPA's Environmental Laboratory at 340-773-2250 Extension 3038 or email at communications@viwapa.vi if you have any questions or inquiries regarding the Potable Water Quality Report for VI0000097 (St. Croix)