



Virgin Islands Water and Power Authority Water Quality Report 2016



St. Croix District
January 1, 2016 through December 31, 2016

Este reporte contiene informacion muy importante sobre el agua que usted toma. Haga que se la traduzcan o hable con alguien que la entienda
Ce rapport contient des informations importantes sur votre eau potable. Traduisez-le ou parlez en avec quelqu'un qui le comprend bien.

WATER QUALITY DATA

DISINFECTANTS-CHLORINE RESIDUAL												
Monthly Ave (ppm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
		1.6	1.8	1.7	1.4	1.3	1.4	1.3	1.3	1.1	1.1	1.3
Quarterly Running Ave.	1.7			1.4			1.2			1.2		
Running Annual Ave. (RAA)	1.5			1.5			1.5			1.4		
MRDL	MRDLG		VIOLATION				LIKELY SOURCE					
4 as Cl2	4 as Cl2		No				Water additive used to control microbes					

Note: Reported RAA for quarters 1-3 are based on results from previous quarters in 2015 not reported on the disinfectants table.

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 2016	2 nd Quarter 2016	3 rd Quarter 2016	4 th Quarter 2016	
51 Richmond		BDL	BDL	0.67	BDL	
LRAA		0.15	0.15	0.17	0.17	
88 Pearl B. Larsen		18.2	40.8	69.1	50.2	
LRAA		49	42.1	42.9	44.6	
317 Calquohoun		BDL	BDL	1.3	1.9	
LRAA		1.3	0.51	0.53	0.8	
327 Frederiksted Dock		2.8	BDL	2.5	3.0	
LRAA		2.7	2.1	2.1	2.1	
Airport		3.8	BDL	2.8	2.5	
LRAA		4.0	2.9	2.5	2.3	
RANGE	HIGHEST LRAA	MCL	MCLG	VIOLATION	LIKELY SOURCE	
0.67 – 69.1	49	80	N/A	No	Byproduct of drinking water disinfection	
Haloacetic Acids (HAA5) (ppb)		1 st Quarter 2016	2 nd Quarter 2016	3 rd Quarter 2016	4 th Quarter 2016	
51 Richmond		BDL	BDL	BDL	BDL	
LRAA		BDL	BDL	BDL	BDL	
88 Pearl B. Larsen		2.7	6.8	7.6	3.9	
LRAA		5.9	5.7	5.6	5.3	
317 Calquohoun		BDL	BDL	BDL	BDL	
LRAA		0.16	BDL	BDL	BDL	
327 Frederiksted Dock		0.86	BDL	BDL	BDL	
LRAA		0.61	0.61	0.42	0.22	
Airport		BDL	BDL	BDL	0.49	
LRAA		0.19	0.19	0.19	0.12	
RANGE	HIGHEST LRAA	MCL	MCLG	VIOLATION	LIKELY SOURCE	
BDL – 6.7	4.6	60	N/A	No	Byproduct of drinking water disinfection	

Note: Reported LRAA for quarters 1-3 are based on results from previous quarters in 2015 not reported on these tables.



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WATER QUALITY DATA

MICROBIOLOGICAL CONTAMINANTS (TOTAL COLIFORM RULE)

JANUARY - MARCH 2016

CONTAMINANTS	HIGHEST # OF POSITIVE SAMPLES IN ANY ONE MONTH	TOTAL # OF POSITIVE SAMPLES	MCL	VIOLATION	LIKELY SOURCE
Total Coliform (TC)	0	0	5% of samples collected per month are TC positive	No	Naturally occurring in the environment, human & animal fecal waste. Microscopic organisms such as viruses & bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
Fecal Coliform or <i>E. coli</i>	0	0		No	

Note: Fecal Coliform/*E. coli* or TC-positive repeat sample following a fecal coliform or *E. coli*-positive routine sample, constitutes an acute violation of the MCL for Total Coliforms.

OCCURRENCE OF MICROBIOLOGICAL CONTAMINANTS (REVISED TOTAL COLIFORM RULE)

APRIL - DECEMBER 2016

CONTAMINANTS	HIGHEST # OF POSITIVE SAMPLES IN ANY ONE MONTH	TOTAL # OF POSITIVE SAMPLES FOR 2016
Total Coliform	1	0
<i>E. coli</i>	1	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

NITRATE/NITRITE

CONTAMINANTS	LOCATION	UNITS	LEVEL DETECTED	MCL	MCLG	VIOLATION	LIKELY SOURCE
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 monitored Inorganic Chemicals annually for three (3) consecutive years. 2015 was the third year of the three (3) consecutive years therefore monitoring was not required in 2016.

WATER QUALITY DATA

SYNTHETIC ORGANIC CHEMICALS (SOC)

MONITORING PERIOD	LOCATION	UNITS	LEVEL DETECTED	MCL	MCLG	VIOLATION	LIKELY SOURCE
First Quarter	St. Croix Entry	ppm	BDL	-	-	No	Naturally occurring in the environment. Byproducts of some agricultural and industrial activities
Second Quarter	St. Croix Entry	ppm	BDL	-	-	No	Naturally occurring in the environment. Byproducts of some agricultural and industrial activities.

Note: VIWAPA-STX is required to monitor for two (2) quarters for three (3) consecutive years. 2016 is the third year of three (3) consecutive years. A total of 29 chemical contaminants were tested under SOC. All results were BDL.

LEAD AND COPPER

MONITORING PERIOD	CONTAMINANT	AL (ppm)	90 th PERCENTILE VALUE	RANGE	VIOLATION	LIKELY SOURCE
Jan – Jun 2016	Lead (Pb)	0.015	0.0092 ppm	1 site over AL	No	Corrosion of household plumbing systems; erosion of natural deposits
	Copper (Cu)	1.3	0.064 ppm	None	No	
Jul – Dec 2016	Lead (Pb)	0.015	0.0028 ppm	None	No	Corrosion of household plumbing systems; erosion of natural deposits
	Copper (Cu)	1.3	0.047 ppm	None	No	

Note: As a result of the change in the water production process in 2012, VIWAPA conducted six (6)-month monitoring in 2016. Based on the population served, 60 samples were collected during each monitoring period.

LEAD AND COPPER

Lead- If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. 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>



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IMPORTANT INFORMATION

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.

Coliforms - bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliform indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

Level 1 assessment - A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 assessment - A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system.

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.



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IMPORTANT INFORMATION

VIWAPA

The Virgin Islands Water and Power Authority (VIWAPA) is a publicly owned utility company, which produces electricity 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.

Water Source — 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 states and 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 states and 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.

Please contact WAPA's Communications Division at 340-774-3552 Extension 2147 if you have any questions about this Potable Water Quality Report for VI000097 (St. Croix).

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