

Virgin Islands Water and Power Authority Water Quality Report 2021



St. Thomas/St. John District
January 1, 2021 through December 31, 2021

Dear Water Distributors/Water Customers:

As your Water Systems Chief Operating Officer, I am delighted to share with you the 2021 Consumer Confidence Report (CCR) or Water Quality Report. This report provides a detailed synopsis of your drinking water as it compares to federal and local laws. It also lists the ranges and levels for all regulated bacteriological and chemical contaminants analyzed from January 1st through December 31, 2021.

In continuing with the *Water Distribution System Master Plan*, the Virgin Islands Water and Power Authority (VIWAPA) has completed several capital projects in 2021 that will not only improve water quality and reliability but also strengthen water infrastructure for today's residents and future generations. Capital Improvement projects in St. Croix updated decades old ductile lines to C-900 PVC pipelines throughout the towns of Christiansted and Frederiksted; in addition to a 10-inch waterline rehabilitation near The Marketplace on the island of St. John and the Clearview waterline expansion on St. Thomas.

To conclude, I hope that you are encouraged to take the time to read all the educational health information provided in this report and to share this data with family and friends. We must work together to strengthen public awareness of the importance of protecting our most precious natural resource. Because clean drinking water is crucial, the men and women in the Water Distribution Department take immense honor in their jobs of maintaining a safe and reliable drinking water supply for you. VIWAPA is thankful for your support throughout the year as we continue to make protecting our customers' health and safety our highest priority.

Respectfully,

Noel Hodge

Chief Operating Officer - Water Systems

This report contains important information about your drinking water. Have someone translate it for you, or speak with someone who understands it.

Ce rapport contient des informations importantes a propos de votre eau potable. Demander a quelqu'un de traduire ces informations pour vous ou discuter avec une personne qui comprend ces informations.

Este informe contiene información importante acerca de su agua potable. Hage que alguien lo traduzca para usted, o hable 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
	0.9	0.9	0.9	1.0	1.0	1.0	0.9	0.9	1.0	0.9	0.9	0.9
Quarterly Running Ave.	0.9			1.0			0.9			0.9		
Running Annual Ave. (RAA)	0.9			0.9			0.9			0.9		
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 2020 and are not reported on this Disinfectants-Chlorine table. St. John monitoring sites were included in the Disinfectants-Chlorine Residual calculations.

OCCURRENCE OF MICROBIOLOGICAL CONTAMINANTS (REVISED TOTAL COLIFORM RULE)		
CONTAMINANTS	HIGHEST # OF POSITIVE SAMPLES IN ANY ONE MONTH	TOTAL # OF POSITIVE SAMPLES FOR 2021
Total Coliform	1	1
<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 2021 (Jan)	2 nd Quarter 2021 (Apr)	3 rd Quarter 2021 (Jul)	4 th Quarter 2021 (Oct)
Four Winds		3.0	2.6	BDL	4.9
LRAA		3.2	4.3	3.6	2.6
Estate Bovoni		33.3	62.7	43.1	37.2
LRAA		35.6	47.0	49.5	44.1
Pine Peace (STJ)		20.8	11.4	20.2	29.6
LRAA		25.9	19.1	19.0	20.5
Paradise Laundry (STJ)		5.9	BDL	1.3	7.5
LRAA		9.7	6.3	5.2	3.7
RANGE	HIGHEST LRAA	MCL	MCLG	VIOLATION	LIKELY SOURCE
BDL—62.7	49.5	80	N/A	No	Byproduct of drinking water disinfection

Haloacetic Acids (HAA5) (ppb)		1 st Quarter 2021 (Jan)	2 nd Quarter 2021 (Apr)	3 rd Quarter 2021 (Jul)	4 th Quarter 2021 (Oct)
Four Winds		BDL	BDL	BDL	0.93
LRAA		1.0	0.6	0.6	0.2
Estate Bovoni		2.2	7.9	3.1	2.5
LRAA		3.7	4.4	4.6	3.9
Pine Peace (STJ)		1.9	1.4	1.9	2.5
LRAA		3.0	2.4	2.4	1.9
Paradise Laundry (STJ)		BDL	BDL	1.1	0.98
LRAA		1.8	0.8	1.1	0.52
RANGE	HIGHEST LRAA	MCL	MCLG	VIOLATION	LIKELY SOURCE
BDL—7.9	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 2020 and are not reported on these DDBP tables.

WATER QUALITY DATA

INORGANIC CHEMICALS (IOC)							
Contaminant	Location	Units	Level Detected	MCL	MCLG	Violation	LIKELY SOURCE
Arsenic	St. Thomas Entry	ppm	BDL	0.010	0	No	Naturally occurring in the environment. Byproducts of some agricultural and industrial activities.
Copper	St. Thomas Entry	ppm	0.0035	1.3	-	No	Runoff from fertilizer use, leaching from septic tanks, sewage, corrosion of natural products.
Cyanide	St. Thomas Entry	ppm	BDL	0.2	0.2	No	Runoff from fertilizer use, leaching from septic tanks, sewage, corrosion of natural products.
Lead	St. Thomas Entry	ppm	0.00029	0.015	-	No	Runoff from fertilizer use, leaching from septic tanks, sewage, corrosion of natural products.
Nitrate	St. Thomas Entry	ppm	BDL	10	10	No	Runoff from fertilizer use, leaching from septic tanks, sewage, corrosion of natural products.
Nitrite	St. Thomas Entry	ppm	BDL	1	1	No	Runoff from fertilizer use, leaching from septic tanks, sewage, corrosion of natural products.
<p>Note: VIWAPA-STT/STJ is on a reduced monitoring schedule of once every three (3) years for IOC that started in 2018. A total of fourteen (14) chemical contaminants were tested under IOC. All other results were Below Detection Limit (BDL).</p>							

VOLATILE ORGANIC CHEMICALS (VOC)							
Contaminant	Location	Units	Level Detected	MCL	MCLG	Violation	LIKELY SOURCE
21 Regulated VOCs	St. Thomas Entry	ppm	BDL	-	-	No	Naturally occurring in the environment. Byproducts of some agricultural and industrial activities
<p>Note: VIWAPA-STT/STJ is on a reduced monitoring schedule of once every three (3) years for VOC that started in 2018. The twenty-one (21) regulated VOCs contaminants were tested. All results were Below Detection Limit (BDL).</p>							

WATER QUALITY DATA

RADIONUCLIDES CONTAMINANTS							
FIRST MONITORING ROUND (July)							
CONTAMINANT	LOCATION	UNITS	LEVEL DETECTED	MCL	MCLG	VIOLATION	LIKELY SOURCE
Gross Alpha	St. Thomas Entry	pCi/L	BDL	15	0	No	Erosion of natural deposits from certain minerals that are radioactive and resulting from oil or gas production and mining activities.
Radium 226	St. Thomas Entry	pCi/L	BDL	5	0	No	Erosion of natural deposits from certain minerals that are radioactive and resulting from oil or gas production and mining activities.
Radium 228	St. Thomas Entry	pCi/L	BDL	5	0	No	Erosion of natural deposits from certain minerals that are radioactive and resulting from oil or gas production and mining activities.
Uranium	St. Thomas Entry	ppb	BDL	30	0	No	Erosion of natural deposits from certain minerals that are radioactive and resulting from oil or gas production and mining activities.

SECOND MONITORING ROUND (October)							
CONTAMINANT	LOCATION	UNITS	LEVEL DETECTED	MCL	MCLG	VIOLATION	LIKELY SOURCE
Gross Alpha	St. Thomas Entry	pCi/L	BDL	15	0	No	Erosion of natural deposits from certain minerals that are radioactive and resulting from oil or gas production and mining activities.
Radium 226	St. Thomas Entry	pCi/L	BDL	5	0	No	Erosion of natural deposits from certain minerals that are radioactive and resulting from oil or gas production and mining activities.
Radium 228	St. Thomas Entry	pCi/L	0.826 ± 0.342	5	0	No	Erosion of natural deposits from certain minerals that are radioactive and resulting from oil or gas production and mining activities.
Uranium	St. Thomas Entry	ppb	BDL	30	0	No	Erosion of natural deposits from certain minerals that are radioactive and resulting from oil or gas production and mining activities.

Note: VIWAPA-STT/STJ was required to conduct two (2) consecutive rounds of quarterly monitoring in 2021.

WATER QUALITY DATA

LEAD AND COPPER

VIWAPA-STT/STJ is on a reduced monitoring schedule of collecting thirty (30) samples between June and September once every three (3) years. The last lead and copper collection was in 2020. VIWAPA-STT/STJ was not required to monitor for lead and copper in 2021. The next monitoring will be in 2023.

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>

VIWAPA –STT/STJ WATER FACTS

1. **Roughly about 46.8 miles of distribution mains and 16.9 miles of transmission lines throughout.**
2. **There are about 416 valves, 198 hydrants, 21 fixed Automatic Flushing Devices (AFD) and 10 mobile AFD on both islands.**
3. **Thirteen (13) pump stations to assist with delivering water.**
4. **Serves a combined population of about 38,000 people.**
5. **Consist of 88 sample stations for water quality testing.**
6. **Daily monitoring of all water quality parameters like chlorine residual, pH, conductivity, turbidity, temperature and orthophosphate residual.**
7. **Approximately 300 bacteriological test performed every month.**



Photo above depicts one of VIWAPA's STT/STJ water sampling stations.

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 - 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 - 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.

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 Ci = 3.7×10^{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. Thomas, St. John and St. Croix.

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 Communications Division
at 340-774-3552 Extension 2147 if you have any
questions about this Potable Water Quality Report for
VI0000443 (St. Thomas/St. John)