United States
Environmental Protection
Agency

USVI – St. Croix Drinking Water Study Sampling and Data Summary
EPA Region 2, Laboratory Services and Applied Science Division

Updated: November 9, 2023

- On August 24, 2023, EPA became aware of VIWAPA customer protests due to red and brown water. In response, VIWAPA, VIDPNR, UVI, and EPA Region 2 developed a sampling plan to assess the water quality of public drinking water in St. Croix and to determine the cause of the water discoloration.

- Sampling Plan – Locations: The final sampling plan included sampling at 66 locations throughout the VIWAPA distribution system and included areas where water quality concerns are prevalent based on historical data, and customer complaints of "red water" issues. The locations focused primarily on distribution water meter connections to homes throughout St. Croix.

    - Distribution water meters are located at the property boundary, typically near the road. The location that homeowners tap into the meter varies across the island. Most residents use cistern water.

- Sampling Plan – Implementation: Teams from VIWAPA and VIDPNR, with EPA participation, took samples from 66 locations on September 28 and 29, 2023.

- Sampling Plan – Analysis: Samples were analyzed for bacteria, secondary drinking water analytes, and primary drinking water metals. The University of the Virgin Islands (UVI) conducted the microbiological analysis, VIWAPA conducted the secondary drinking water analysis (pH, conductivity, turbidity, chlorine residual, and iron) and microbiological analysis, and the EPA Region 2 Laboratory conducted the primary drinking water metals' analysis.

- Primary drinking water metals' analysis: The EPA Region 2 Laboratory received the samples for primary drinking water metals on October 4, 2023. The samples were analyzed, and the lab issued its results on October 12, 2023. EPA shared and discussed the final results with USVI on October 13, 2023.

- A total of 108 samples were collected at 66 sampling locations.
    - ✓ 84 total samples were collected from 42 locations in pairs, generally labeled "A and "B", with the first sample within one minute followed by a second sample after flushing the water for three to five minutes.
    - ✓ 24 total samples were collected from 24 locations as single samples after flushing the water for three to five minutes.
    - ✓ Eight additional (not part of the 108 total) samples collected as "bottle" blanks using laboratory reagent grade water.

- Lead: Of the 108 samples taken from 66 sampling locations, 38 samples taken from 36 locations exceeded EPA's 15 ppb Lead Action Level. Lead levels in the samples that exceeded EPA's Lead Action Level ranged from 16 ppb to 20,000 ppb. After flushing the water for three to five minutes, the levels fell to below the Lead Action level for all but two samples in the Estate Whim and Estate Profit.

- Copper: Of the 66 sampling locations, samples from 15 locations exceeded EPA's 1300 ppb Copper Action Level. Results for copper ranged between 1320 and 137,000 ppb. For the second samples, taken after

flushing the water for three to five minutes, the levels fell to below the Copper Action level for all locations.

- EPA, in consultation with VIDPNR, VIWAPA and UVI, is putting together a plan to conduct sequential sampling at homes with elevated lead levels to identify the source of lead. For example, brass valves in the distribution, or brass components in the distribution meters, may be sources of lead.

- EPA agrees with the USVI's assessment that the issue is likely not originating from VIWAPA's water treatment plant and that the water VIWAPA produces is not likely a source of the elevated lead and copper levels. More data is needed to determine a cause. Out of an abundance of caution, EPA is strongly recommending that people on St. Croix not consume VIWAPA water from the distribution system -- whether the water is piped from the distribution system to a household cistern or piped directly from the distribution system to a household tap – until more information is gathered on the root cause of the lead.

- EPA is actively working with the USVI government to help find the root cause of the original elevated lead and copper levels.

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