



SUBMISSION FORM

All submission forms must include the following information. Separate submission forms must be turned in for each eligible program. **Deadline: July 1, 2022.** Please include this submission form with the electronic entry. If you do not receive an email confirming receipt of your entry within 3 days of submission, please contact [Gage Harter](#).

PROGRAM INFORMATION

County: County of Henrico
Program Title: PFAS Well Sampling Initiative
Program Category: Health & Human Services

CONTACT INFORMATION

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SIGNATURE OF COUNTY ADMINISTRATOR OR DEPUTY/ASSISTANT COUNTY ADMINISTRATOR

Name: Brandon Hinton
Title: Deputy County Manager for Administration
Signature: 

Program Overview

This program was developed as part of an ongoing investigation into the potential risk to public health from per- and polyfluorinated alkyl substances (PFAS) contamination of groundwater within the middle Chickahominy River watershed, specifically the vicinity of the White Oak Swamp in eastern Henrico County.

After receiving and validating surface water PFAS concentrations throughout the White Oak Swamp, it was determined that several areas had concentrations exceeding the 70 ppt safety advisory level. The highest PFAS concentrations were found in surface water samples collected in areas in close proximity to the Richmond International Airport.

Eastern Henrico County has a large amount of rural residential properties and several thousand private drinking water wells. To efficiently determine the extent of the contamination, we initially decided to prioritize testing of wells located within the 100-year flood plain of the White Oak Swamp Creek.

Several public meetings were held to inform citizens of the information. Data was shared with the public and residents were encouraged to sign up to have their private wells tested. A designated phone number and email address was provided for citizens to submit requests, which were then added to a shared database to track sampling efforts.

Problem/Challenge/Situation Faced by Locality

Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans. The US EPA has established a health advisory level for PFOA/PFOS at 70 parts per trillion (ppt). Although this is not a regulatory water quality standard, it is currently recognized as an advisory threshold designed to help populations minimize the adverse health effects of exposure during their lifetimes. The County of Henrico has no regulatory responsibility or authority over private drinking water wells, however the County recognized this as a community issue and wanted to act proactively to ensure that all of our residents have access to safe drinking water.

How Program Fulfilled Awards Criteria

As stated before, this project is the first of its kind for both Henrico County and the State of Virginia. This program has helped to pave the way for future PFAS-related environmental contamination investigations and private well sampling initiatives. It has also fostered a strong bond of trust and support with the residents of Henrico County.

How Program Was Carried Out

Due to the widespread use of PFAS chemicals in many different consumer products, there is a high potential for contamination of samples during collection. In order to ensure the quality and accuracy of data being collected it was vital to ensure that samples were collected per a strict sampling protocol. Sample collection staff were provided training by local industry experts from our third-party certified ultra-trace laboratory. Special consideration must be made regarding types of clothing worn and cosmetics used when samples are collected, as some of these products contain PFAS.

Sampling began on December 3, 2021. Over the next several weeks, staff successfully sampled up over 250 residences. With a project of this magnitude and the large amount of data being generated, it was evident that a third-party data analysis was going to be needed. Henrico retains the contract with environmental engineering consultant firm that was able to offer data review/validation services. In addition, this firm was able to assist with developing communication efforts to help distribute individual sample results to our residents.

This project is the first of its type for Henrico County and within the state of Virginia. Henrico County has worked closely with the Virginia Department of Health and Virginia Department of Environmental Quality throughout the entirety of this project, developing the Middle Chickahominy River Watershed PFAS Contamination 2021 Unified Command Team. The Virginia Department of Health has assisted with coordinating with any public water supply wells. The Virginia Department of Environmental Quality is proceeding with environmental sampling (sediment, fish tissue, etc.) throughout the area and further investigating the source of the PFAS contamination. With Phase I of the initiative complete, we will begin identifying any other potential areas that will need additional monitoring. The procedures developed for this initiative will continue to be a guideline for all PFAS related monitoring conducted in the County for years to come.

Financing and Staffing

Sampling conducted by the DPU Monitoring & Compliance Section. This section consists of 1 Section Manager, 1 Water Quality Compliance Supervisor, and 4 Water Quality Compliance Specialists.

Sample Collection: Performed by DPU Water Quality Compliance Specialists - \$20-25/hour

Sample Laboratory Analysis: Outsourced to third-party laboratory - \$500/sample (total of around \$145,000 for Phase I of the Well Testing Initiative).

Data Review/Validation: Performed by third-party consultant ~\$10,000

Program Results

Since starting this program in December 2021, the County has monitored a total of 277 private and public wells for PFAS. Of these samples, 224 were non-detect for any PFAS (approximately 80%). Of the 53 samples that had detections for PFAS, only 2 sites had concentrations of PFOS/PFOA greater than the 70 part-per-trillion EPA Lifetime Head Advisory level. The County is working with these two homeowners to determine what filtration systems could be installed to reduce the elevated concentrations of PFAS.

Brief Summary

In October 2021, Henrico County was notified by the Newport News Waterworks Source Water Protection Program of elevated levels of per- and polyfluorinated alkyl substances (PFAS) in the middle Chickahominy River watershed – specifically the White Oak Swamp. The Henrico Department of Public Utilities immediately took action to validate the Newport News Waterworks results, performing surface water monitoring at 15 sites throughout the White Oak Swamp area. Results of this monitoring confirmed the elevated PFAS concentrations throughout the swamp. Once surface water PFAS concentrations had been confirmed, the County immediately began identifying private groundwater water wells in the vicinity of the swamp. The County's Well Testing Initiative was developed, asking residents to sign-up to have their wells tested (at no cost to the resident) to identify the presence of PFAS in their drinking water.

DPU staff had to be specially trained to conduct this sampling, following strict sampling protocol to avoid contamination of samples. In the first month, staff successfully sampled

drinking water from over 250 private residences. Laboratory analysis was outsourced to a certified PFAS ultra-trace laboratory, located in Wilmington, NC. The County also acquired the assistance of a third-party consultant to help review and validate sample results to ensure accurate information was being provided to our residents.

Henrico's Response to Elevated Levels of PFAS in the Chickahominy River Basin

<https://www.youtube.com/watch?v=WREKRT67i44>