COMMUNITY UPDATE

NEW YORK STATE | Department of Environmental Conservation | Department of Health

APRIL 2023

POESTENKILL AREA PFAS CONTAMINATION: Multiple Low-Level Sources of PFAS Are Likely Cause

The New York State Departments of Environmental Conservation (DEC) and Health (DOH), and the Rensselaer County Department of Health (RCDOH), are working together to protect public health and the environment in the Poestenkill community. Working together, State and County agencies have investigated the known potential sources of per- and polyfluoroalkyl substances (PFAS) contamination, including the local waste transfer station, lumber yard, a manufacturing facility, former landfill, former speedway, former car wash, tire disposal area, and the Algonquin Middle School property. In addition, wastewater discharges (septic systems) were also considered as potential sources of PFAS. The investigation did not identify an industrial source for this contamination.

To update the community on ongoing efforts to protect drinking water supplies and investigate potential sources of contamination, **DEC, DOH, and RCDOH are holding a community availability session on May 18, from 5 to 8 p.m. at the Algonquin Middle School.** At the availability session, DEC, DOH, and RCDOH experts will staff tables featuring information about the various aspects of the investigation and response, providing opportunities for local residents to ask questions of experts one-on-one. Much like a typical 'open house,' attendees can arrive and depart at any time during the session.

AVAILABILITY SESSION

Thursday, May 18, 5-8 p.m.
Algonquin Middle School Cafeteria

Join DEC, DOH, RCDOH, and the Town of Poestenkill to learn about efforts to protect drinking water supplies and investigate PFAS contamination.

The investigations in Poestenkill were designed to identify the source of PFAS detected in the drinking water of the Algonquin Middle School and private wells in the surrounding area. The investigation spanned an area greater than 200 acres in size and included collection of more than 150 samples for PFAS analysis, in addition to hundreds of drinking water samples. Information collected over the last 18 months suggests multiple low-level sources of PFAS are contributing to the PFAS observed in drinking water.

INVESTIGATION SUMMARY

The State and County's extensive investigation suggests there is no industrial source contributing to the PFAS detected in drinking water at or near the Algonquin Middle School. The results indicate that the geologic conditions are conducive for surface water and shallow groundwater to mix with the deeper aquifer zone, which currently serves as the school's drinking water supply. Additional maps and reports on the investigation are available for review at DEC's Poestenkill Assessment Area website.

Groundwater contamination that is diffuse and not shown to be emanating from a known commercial or industrial source is not amenable to conventional source treatment. When these conditions are present, DEC and DOH recommend using public water and/or sewer systems to serve the affected area. DEC, DOH, and our partners are working with the town of Poestenkill to explore infrastructure options that will prevent public exposure to contamination, such as the creation of the new water district that would serve the Middle School and surrounding community.

The State and County's investigation began after DOH-required public water supply sampling at the Algonquin Middle School in early 2021 detected perfluorooctanoic acid (PFOA) at levels slightly above New York's public drinking water standard—Maximum Contaminant Level (MCL)—of 10 parts per trillion (ppt). To ensure access to clean water for the school community, the school installed a treatment system.

This community update describes the extensive investigations and actions to prevent exposures to contamination taken by the agencies.

Previous updates can be found at: https://www.dec.ny.gov/chemical/124334.html

Private Well Testing

To date, RCDOH has sampled 97 private wells near the school. PFOA and/or perfluorooctane sulfonic acid (PFOS) were detected above the State's public drinking water standards of 10 ppt in 14 private wells. Although New York State does not regulate private wells, the State's drinking water standards for PFOA and PFOS for public water supplies are used as guidelines to recommend actions to reduce exposures in private wells. As a result, DEC provided the 14 homes served by private wells that exceed 10 ppt with point-of-entry-treatment systems (POETs) to filter out PFAS and provide clean drinking water. The remaining 83 private wells did not show PFOA or PFOS detections above the standards.

Fourteen additional private wells had initial results between 5 and 10 ppt of PFOA and/or PFOS, and homeowners gave DEC permission to resample 11 of these wells in July 2022. Resampling results were consistent with previous results. The resampling effort also included analysis for artificial sweeteners and other household-derived chemicals commonly found in domestic waste streams, like septic systems. Sucralose or Acesulfame Potassium, common artificial sweeteners resistant to environmental degradation, appeared in every sample. While not harmful to humans at the levels detected, they are commonly used as markers to trace the impacts of septic systems on nearby drinking water supplies. Additional samples have been collected for these markers at Poestenkill-area homes with POETs to study wells with higher concentrations of PFOA and/or PFOS.

Based on private drinking water data collected over the last 18 months and the extensive source investigation, there are no plans to expand the private well testing program to more distant parts of the town of Poestenkill. The investigation findings suggest that PFAS detections in private wells are likely emanating from non-point sources of wastewater.

For more information on PFAS and private wells: https://www.health.ny.gov/environmental/water/drinking/pfasinprivatewells.htm

Algonquin Area PFAS Assessment

In November 2021, DEC completed a preliminary investigation at the Middle School to help determine potential source(s) of PFAS found in water supply wells.

Results from this initial phase of work did not identify an obvious source(s) of contamination but provided valuable data to help narrow down the areas of concern to investigate further. DEC then worked to acquire legally required access agreements to expand the investigation to additional properties.

DEC released the *PFAS Assessment, Phase II Work Plan* in April 2022, describing the steps necessary to investigate and identify sources. The work plan is available for download at the DEC's Poestenkill Assessment Area website: https://www.dec.ny.gov/chemical/124334.html

Air-rotary rig drilling bedrock boreholes at Algonquin Middle School

In May 2022, DEC hired an engineering consultant and specialized drilling contractors to complete the second phase of field work in the area. Field work consisted of investigating the overburden materials (loose, unconsolidated materials on top of bedrock), focusing on collecting soil and groundwater samples for PFAS

and confirming depth to bedrock. An extensive bedrock boring program was also completed.

Bedrock boring program. DEC contractors began drilling boreholes into bedrock in July 2022 and finished installing bedrock wells in September. Boreholes were drilled to an average depth of 180 feet below ground surface at five locations:

- Location 1 - Intersection of NY 351/NY 66
- Location 2 - Ford Road
- Location 3 - Algonquin Middle School
- Location 4 - Liberty Lane/Weatherwax Road
- Location 5 - Mohawk Drive

Two bedrock wells were completed at Locations 1 through 4. Three bedrock wells were completed at Location 5 due to identification of a transmissive fracture at an intermediate depth (at about 70 feet below grade). Each location has a deep well installed near the bottom of the 180-foot borehole and a paired shallow well installed between 15 and 37 feet.

Bedrock well sampling and flow determination. Bedrock well samples were collected in September 2022 and analyzed for PFAS and artificial sweeteners, which are commonly found in domestic waste streams (septic systems). PFOA and/or PFOS were also observed regionally in bedrock monitoring wells. The highest PFOA concentrations in bedrock groundwater were detected in samples collected from the two Algonquin Middle School bedrock monitoring wells (18 and 24 ppt) and the shallow bedrock well along Mohawk Drive (12 ppt). PFOS was also detected at the school at concentrations between 12 and 17 ppt. Notably, while artificial sweeteners were detected in all the installed bedrock wells, the highest concentrations were detected in the bedrock wells installed closest to the school's septic system at Location 3.

The newly installed wells were surveyed and depth to water was measured to calibrate downhole pressure transducers (described below) and calculate area groundwater flow direction and gradient. Investigators determined that bedrock groundwater flows in a northwesterly direction in the study area.

Devices called downhole pressure transducers, which measure and record changes in water levels over time, were deployed within the installed wells following groundwater sampling. The transducers remained in place for four weeks and recorded multiple precipitation events. Investigators reviewed data to assess connectivity of overburden and bedrock aquifers, connectivity of shallow and deep fractures, and effects of pumping from nearby supply wells. The data showed significant hydraulic connections between the shallow and deep bedrock zones and a large hydraulic influence of the water supply pumping on bedrock flow in the area.

Overburden soil and groundwater sampling. In August 2022, DEC contractors began drilling as part of the overburden investigation at the Algonquin Middle School. The investigation consisted of soil sampling and installation of eight overburden monitoring wells. The highest concentrations of PFOA (24 ppt) and PFOS (51 ppt) observed in overburden groundwater were measured in samples collected from wells adjacent to the school's septic system, which is located beneath the athletic fields behind the school. The highest levels of artificial sweeteners were also detected in the wells near the septic system, suggesting that wastewater is the most likely source of PFAS contamination in groundwater serving as the school's drinking water supply. Soil sampling results for PFOA and PFOS were below guidance values for residential use.

Surface water and sediment sampling. Co-located surface water/sediment samples were collected on July 27, 2022. Ten locations along a tributary of Newfoundland Creek were sampled between Heather Ridge Road (furthest upstream) and Weatherwax Road (furthest downstream). PFOA and PFOS were not detected above 10 ppt in any surface water sample. Detections in surface water ranged from 2 to 9.1 ppt for PFOA and up to 5.2 ppt for PFOS. PFOS concentrations in sediment ranged from non-detect to 1.5 parts per billion; PFOA was not detected in the sediment samples.

Another round of surface water sampling was completed during the first week of October 2022 and analyzed for PFAS and artificial sweeteners. Analytical results show that PFOA concentrations had decreased compared to earlier results. Artificial sweeteners were detected in six of seven sampled locations.

Overburden Investigations at Nearby Properties

DEC hired additional contractors to investigate the overburden soil at nearby properties. Work began in August 2022. Overburden monitoring wells were not installed at all properties due to the presence of shallow bedrock or the absence of groundwater.

Overburden characterization per property:

- Hass Manufacturing: Soil sampling
- Former Car Wash: Soil sampling
- Valente Lumber Yard: Soil sampling and installation of three overburden monitoring wells
- Cooper Tire: Soil sampling and installation of one overburden monitoring well
- Waste Management of New York: Soil sampling and installation of four overburden monitoring wells

Sampling was completed in September 2022 and samples were analyzed for PFAS and artificial sweeteners. Analytical results indicated that, like the bedrock aquifer, PFOA and PFOS are present below or slightly above 10 ppt across the study area.

Waste Management Transfer Station: In April 2022, DEC directed Waste Management of New York (WMNY) to collect and analyze samples for PFAS from the underground leachate collection vault, the small pond, two former drinking water supply wells, and from any existing groundwater monitoring/supply wells (if present). DEC also requested WMNY to provide documentation of leachate transported to and discharged to the Schenectady wastewater treatment plant over the past five years, as well as the results of any tests for leaks related to the facility's leachate collection system.

Samples from four existing groundwater supply wells were collected in April 2022. Of the four wells sampled, PFOA was detected above 10 ppt in one well, which is used for non-potable purposes, at a concentration of 15 ppt; PFOS was not detected above 10 ppt in any groundwater samples. Surface water concentrations were also detected for PFOA and PFOS at 2.9 ppt and 7.6 ppt, respectively. PFOA and PFOS were detected in wastewater within the leachate tank at concentrations of 100 ppt and 41 ppt, respectively.

WMNY's June 2022 report documented no leaks related to the leachate collection system. The tank is double walled with an alarm system between the inner and outer tanks that would detect the presence of liquid. According to the report, more than 67,000 gallons of wastewater have been pumped and transported for appropriate disposal off site since 2018.

The WMNY report is available on DEC's Poestenkill Assessment Area website: https://www.dec.ny.gov/chemical/124334.html

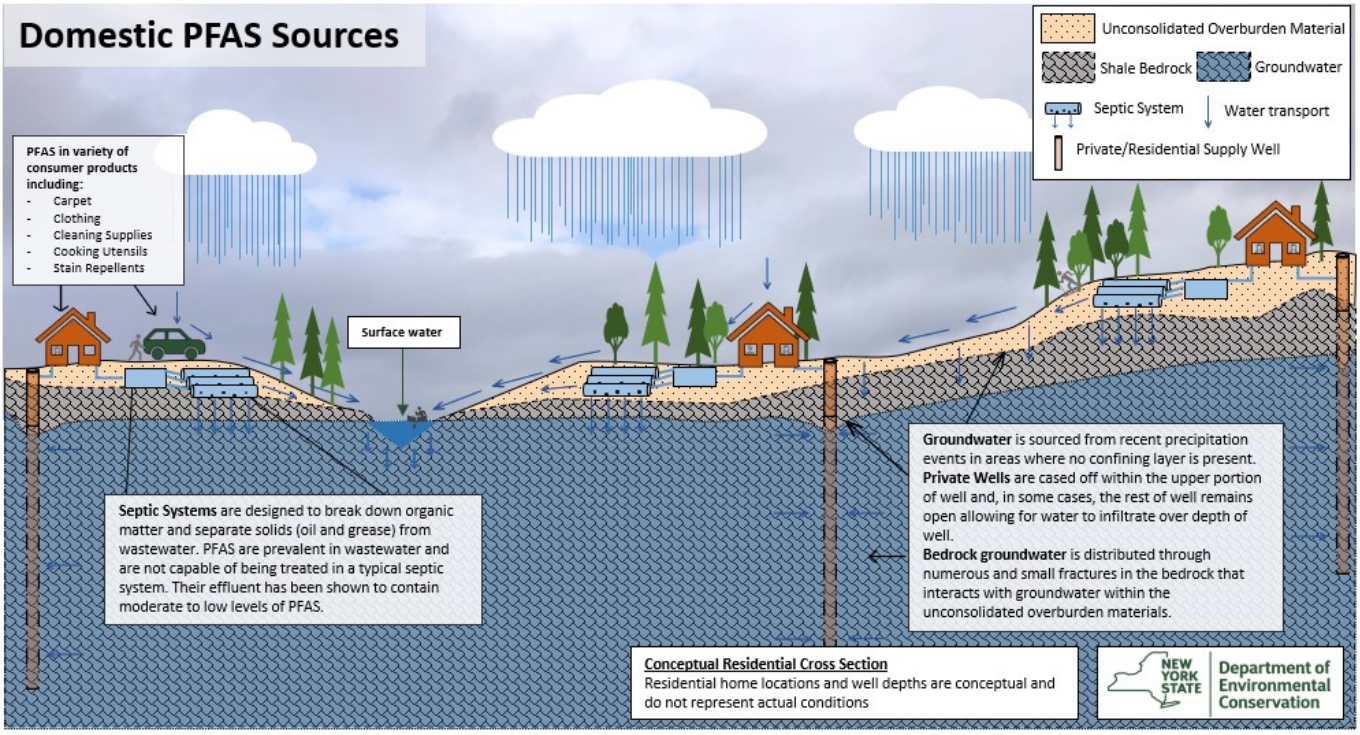
As mentioned previously, DEC installed four new overburden wells on the transfer station property to assess potential groundwater impacts due to waste handling activities and possible discharges from the leachate collection system. PFOA and PFOS were detected in every groundwater sample but only one result exceeded 10 ppt (14 ppt of PFOS). This sample was collected from the monitoring well located on the south side of the onsite surface water pond.

Soil sampling results for PFOA and PFOS were below guidance values for residential use.

Based on these results, as well as samples collected from the bedrock aquifer and the small pond showing only minor impacts on the WMNY property, the investigation did not identify a significant source of PFAS migrating off the transfer station property and contaminating area drinking water wells. In addition, there is no evidence that the leachate collection system has failed or that the tank has leaked.

Valente Lumber Yard: Overburden groundwater samples were collected from three newly installed monitoring wells. Results ranged from 6.2 to 10 ppt and from non-detect to 4.3 ppt for PFOA and PFOS, respectively.

Two co-located surface water and sediment samples were collected from an onsite pond and at the outlet of a drainage pipe. PFOA was detected in both samples at concentrations of 12 ppt and 14 ppt and PFOS in one sample at 21 ppt.



The graphic above is a stylized cross-section depicting the various sources of PFAS near the surface in relation to the deeper bedrock and pumping wells that act as conduits for possible exposure.

Valente Lumber Yard: *(continued)*

Soil sampling results for PFOA and PFOS were below guidance values for residential use.

The results did not identify a significant source of PFAS migrating off the lumber yard and contaminating area drinking water wells.

Hass Manufacturing, Cooper Tire, and Former Car Wash Property: Soil sampling results from Hass Manufacturing and Cooper Tire were below guidance values for residential use. One sample collected on the Former Car Wash Property showed a PFOS soil concentration of 11 ppb, slightly above the PFOS soil guidance value for residential use of 8.8 ppb.

PFOA and PFOS were not detected in the groundwater sample collected from Cooper Tire.

The results do not indicate the properties are a source for PFAS contamination in the area.

Investigation of Other Properties

Dynamic Systems Inc.: Due to PFOA contamination detected in a groundwater monitoring well at Dynamic Systems Inc. (DSI) as part of DEC's source investigation, the State acted to further assess PFAS in groundwater at DSI and potential exposures in nearby drinking water supply wells.

DEC and DOH offered sampling to owners of 13 properties in the vicinity of DSI. Of the 13, six property owners responded, and those private water supplies were sampled and analyzed for PFAS and volatile organic compounds (VOCs). Results for the six properties were shared with the property owners. There were no detections of PFOA, PFOS, or VOCs in any of the samples; therefore, no actions are needed to address potential exposure in the drinking water.

At DEC's request, DSI collected additional groundwater samples for PFAS analysis from six existing onsite monitoring wells. This effort was completed in April 2022. The results were consistent with previous

sampling and do not indicate the presence of a source of PFAS in drinking water. The final report is available on the DEC's Poestenkill Assessment Area website. No additional action is planned to investigate this location other than periodic monitoring of PFAS in existing wells.

NYS PFAS Product Bans/Extended Producer Responsibility

PFAS are common in our daily lives and present in many household products, such as carpeting, fabrics, cosmetics, stain-proofing applications, food packaging, cleaning agents, and floor waxes. Use of these common products in households and institutions creates waste streams (such as septic systems) with low levels of PFAS. Inevitably, these chemicals enter the environment.

New York State recognizes that removing PFAS from the environment requires a long-term, concerted effort involving laws and regulations aimed at manufacturers, in addition to work underway to limit direct discharges of emerging contaminants to groundwater or surface water bodies. Over the past few years New York enacted laws to phase out intentionally-added PFAS in carpeting, aqueous film forming foam ("AFFF"), food packaging, and apparel, among other products.

Ongoing Community Engagement

DEC, DOH, and RCDOH experts will continue to be available to answer questions from the community. Please see "Who to Contact" below for key points of contact.

WHO TO CONTACT

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