

INVESTIGATION REPORT

Village of Mayville Water Supply Contamination
Spill Number 2008000
Village of Mayville
Chautauqua County
February 2021



**Department of
Environmental
Conservation**

Prepared by
New York State Department of Environmental Conservation
Region 9
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EXECUTIVE SUMMARY

Elevated concentrations of the contaminant perfluorononanoic acid (PFNA) have been detected in the public water supply system for the Village of Mayville (the Village). PFNA is a member of the class of contaminants known as per- and polyfluoroalkyl substances (PFAS). The PFAS family of synthetic fluorinated compounds were mass produced in the United States for decades, dating back to the 1950s. PFAS are used in a wide variety of industrial and commercial applications such as textiles, aqueous film forming foams (AFFF), metal plating, semi-conductors, paper and food packaging, coating additives, cleaning products, pesticides and personal care products. According to United States Environmental Protection Agency (USEPA), PFAS compounds pose potential adverse impacts to the environment and human health.

In response to these detections, the New York State Department of Environmental Conservation (NYSDEC) initiated an investigation to identify any potential source areas of PFNA. Tasks completed during the preliminary investigation included a site reconnaissance, interviews with locals and Village officials, the installation of six (6) monitoring wells, and the collection and analysis of samples from various environmental media (supply wells, surface water, sediment, groundwater, and surface soils). The investigation was divided into six areas: Morris Street, Patterson Street, Mud Creek, the Town of Chautauqua Municipal Building (TCMB), Lakeside Park, and Maple Drive East. The TCMB and Lakeside Park locations were selected and investigated as potential source areas due to the reported use of AFFF at both locations.

As part of this investigation, samples were collected in three phases. The first phase occurred on December 15, 2020. During this event, groundwater samples were collected from all four (4) supply wells, from three (3) pre-existing monitoring wells adjacent to the supply wells, and one (1) surface water sample from Mud Creek. The second phase occurred on January 7, 2021. Samples collected during this event included two (2) groundwater samples from additional pre-existing wells, three (3) surface water samples from Mud Creek, a surface water and a sediment sample from the outfall at the TCMB, and six (6) surface soils samples from the TCMB and Lakeside Park. The final phase of the sample collection occurred on January 12, 2021. Six (6) groundwater samples were

collected from each of the monitoring wells installed by NYSDEC for purposes of this investigation.

PFNA was detected in Supply Well 1 at 280 nanograms per liter (ng/L, or parts per trillion [ppt]), in Supply Well 2 at 140 ppt, and in Supply Well 3 at 290 ppt. PFNA was not detected at Supply Well 4 or any of the adjacent monitoring wells located near Supply Wells 2, 3, and 4. Low levels of PFNA were detected in surface water samples collected from Mud Creek. Within Mud Creek, the Morris Street location sample contained a concentration of 2.6 ppt, and along Bloomer Road a concentration of 0.28 ppt was detected. The NYSDEC installed monitoring wells contained PFNA concentrations along Morris Street up to 290 ppt, Patterson Street up to 16 ppt, and in the TCMB area up to 110,000 ppt. Elevated PFNA levels were also detected in the TCMB outfall, where surface water concentrations up to 6,300 ppt and sediment concentrations up to 8.2 ppt were detected. PFNA concentrations in the surface soil samples collected at the TCMB ranged from 16 to 680 micrograms per kilogram (ug/Kg, or parts per billion [ppb]) and at Lakeside Park the concentrations ranged from 0.52 to 17 ppb.

The most significant concentrations of PFNA and other PFAS compounds, including PFOA, were detected at the former football field of the TCMB. Samples from this area indicate that the football field at the TCMB is a primary source area of PFNA. Further investigation is required to evaluate PFNA contaminant migration from this area and its potential impact on Supply wells 1, 2, and 3. Sample results from new Supply Well 4 and an evaluation of the local geology indicate that the source of PFNA at the TCMB does not represent a potential threat to Supply Well 4. The bedrock ridge between the TCMB and Supply Well 4 likely indicates a drainage divide between Supply Well 4 and the TCMB. Additional sampling and investigation will help to provide a better understanding of the local geology, contaminant migration pathways, the extent of PFNA contamination within groundwater, and the interaction of surface water drainage with groundwater.

As elevated levels of PFNA were detected in three of the four Village of Mayville public water supply wells, NYSDOH, in consultation with the Chautauqua County Department of Health and Village of Mayville officials, recommended that 30 nearby private wells be evaluated to determine if they contained similar contamination. A coordinated effort between NYSDEC, NYSDOH, Chautauqua County Department of Health, and Village of

Mayville officials resulted in the sampling of 25 private wells in December 2020 with agreement from the property owners. Five properties either did not respond or declined the offer for private well sampling. The samples were analyzed for six of the most common PFAS compounds including PFNA, PFOS and PFOA. One additional well was identified and sampling of this well will be conducted soon. Results from the December 2020 sampling event indicated that none of the private wells sampled contained PFNA contamination or any of the other five compounds analyzed for.

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