



ERIE COUNTY WATER AUTHORITY

INTEROFFICE MEMORANDUM

March 5, 2021

To: Terrence D. McCracken, Secretary to the Authority

From: Michael Wymer, Senior Production Engineer *MW*

Subject: Staff Item - Raw Water Intake Improvements, Van de Water and Sturgeon Point WTP
ECWA Project No. 202100052

The Sturgeon Point Water Treatment Plant periodically experiences interruptions of raw water flow as a result of frazil ice blockage of the intake structure. These blockage events occur under a specific combination of weather and lake conditions (cold, still, cloudless nights as the water temperature approaches freezing). The resulting disruptions in raw water flow require the operator to initiate a backflushing operation using water or air fed back to the intake structure through one of the 3-inch chemical feed lines. The conditions at the Van de Water raw water intake differ from that at Sturgeon Point and do not promote the formation of frazil ice at the intake.

The most recent significant frazil ice incident occurred in mid-February, when an obstruction interrupted flow through the intake for a number of hours. An inspection of the intake structure the following week using a remote-operated vehicle revealed no apparent damage to the wood timber grating, likely a result of the responsive actions of plant operators to clear the blockage.

The Van de Water and Sturgeon Point Water Treatment Plants each utilize a 3-inch diameter HDPE pipe to deliver chemicals through the intake tunnel to a diffuser installed within each intake crib. A second HDPE line provides a raw water sample back from the crib. Chemical addition at the intake crib provides valuable oxidant contact time and also helps protect the intake tunnel from zebra mussel infestation. As noted above, the chemical feed line at Sturgeon Point is also utilized as part of the frazil ice backflushing protocol. These lines were originally installed in the early 1990s and are approaching the end of their reliable life.

The Engineering Department will prepare a Request for Proposals for the design and construction of a more resilient system to protect each intake, including a new, more frazil ice resistant intake crib grating system for the Sturgeon Point intake crib and replacement of the existing HDPE piping system at each treatment plant. It is desired to begin design of the intake improvements in 2021 to allow construction to begin in 2022.

A new budget item will be created for this project in the amount of \$300,000. (\$200,000 to Unit 2510 Sturgeon Point and \$100,000 to Unit 2515 Van de Water).

MWW:jmf
Attachments
cc: R.Stoll
L. Kowski
ECWA-731-210-X-16