

Town of Maiden

Wastewater Treatment Plant and Collection System

2021 Performance Annual Report

I. General Information

Facility Name:	Town of Maiden Wastewater Treatment Plant
Responsible Entity:	Town of Maiden
Person in Charge/ Contact:	Timothy R Hedrick, ORC
Permit #:	NC0039594
Reporting Period:	January 1, 2021 – December 31, 2021

Description of Treatment Process

The Town of Maiden owns and operates a 1.0 MGD Sequencing Batch Reactor Wastewater Treatment System.

The Town of Maiden SBR Process consists of two large SBR tanks where raw water is treated after preliminary treatment (screening and grit removal). At any point in time the SBR's have a minimum level of 9.1 feet. The 9.1 feet in each SBR basin is reserved for the correct concentration of microorganisms. For 120 minutes one of the SBR's will accept raw wastewater while intermittently mixing and aerating called the react fill stage. Once the 120 minute react fill stage is complete the other basin will begin accepting influent as it starts its cycles. The next stage, after react fill, is a 30 minute react stage where the basin is adequately mixed and aerated to further treat the raw water with the microorganisms, with no additional influent being added during this cycle. After the react stage the SBR falls into a settling mode where the sludge settles and then the treated water is decanted with a mechanical decanter to an equalization basin for controlled release to the contact chamber for disinfection. After adequate disinfection with sodium hypochlorite the clean effluent has the chlorine residual removed with sodium bisulfite and is then discharged into Clark's Creek.

At the end of each 4 hour cycle each SBR wastes from the settled sludge for a programmed time interval. The wasted sludge is pumped over and stored in one of two available aerobic digesters where it digests until the sludge is hauled to the Veolia Compost Plant in Hickory. During sludge hauling operations the digester blowers are usually taken out of service to allow the sludge to settle and compact, so we can decant the clear water that develops on the digesters and be able haul a thicker sludge. The Veolia Compost Plant makes a class “A” product from our sludge and other area municipalities.

II. Performance

The SBR facility continues to produce high quality effluent. In 2021 the Town of Maiden WWTP produced a removal rate of 98.1% for BOD with an average Effluent concentration of 3.9 mg/L and a 98.4% removal rate for TSS with an average Effluent concentration of 1.35 mg/L. The Town of Maiden Wastewater Treatment Facility treated an average of 476,517 gallons per day and a total of 166.0442 gallons for the year.

Violations (January 1, 2021 – December 31, 2021)

There was no violations for the year of 2021

III. Notification

There was no public notice or violations to list for 2021

IV. Certification

I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the users or customers of the Town of Maiden sewer system and that those users have been notified of its availability.

Date: February 16 2021

Timothy R Hedrick
Wastewater Treatment Plant ORC
Town of Maiden