

CHEATHAM COUNTY, TN WASTEWATER TREATMENT PLANT

Surface Water Discharge Industrial Park Protects Cumberland River

September 10, 2020



DESIGN CHARACTERISTICS

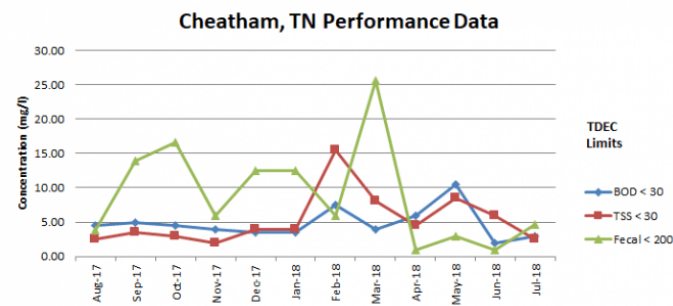
	Influent	Effluent
DESIGN FLOW (MGD)	0.1	0.1
DESIGN TEMP (C)	10	-
BOD5 (mg/l)	350	< 30
TSS (mg/l)	350	< 30
TKN (mg/l)	65	-
AMMONIA-N (mg/l)	50	-
FECAL (MPN/100ml)	-	<200

OVERVIEW

The Cheatham County, TN Industrial Park lies on the banks of the Cumberland River roughly fifteen miles west of downtown Nashville, TN. It is home to various light industrial users including a concrete manufacturing facility and a freight carrying company. When the park's existing package plant deteriorated to the point it could no longer reliably meet permit, the Cheatham County Water & Wastewater Authority sought to replace the existing system with a technology that would offer a long life cycle and could be easily expandable to accommodate future growth and more stringent performance standards.

The County's engineer selected an AquaPoint AquaCELL™ moving bed biofilm reactor (MBBR) treatment system for its proven performance capability, ease of operation and small footprint. The system incorporates fine primary screening and parallel treatment trains consisting of flow equalization, dual stage MBBRs, secondary clarifiers, sludge digestion and chlorine disinfection. All of the process tanks were fabricated of fiberglass and S.S. to ensure > 30 years of useful life. State of the art PLC/HMI controls provide system automation. Effluent from the plant is discharged to the Cumberland River.

PERFORMANCE DATA



- System Commissioned: 2016
- Detectable Limit for BOD & TSS: 2 & <2 mg/l respectively
- Data Source: TDEC Records

DATE	BOD5 (mg/l)	TSS (mg/l)	Fecal (mg/l)
AUG. 2017	4.50	2.50	3.75
SEP. 2017	5.00	3.50	13.85
OCT. 2017	4.50	3.00	16.65
NOV. 2017	4.00	2.00	5.95
DEC. 2017	3.50	4.00	12.45
JAN. 2018	3.50	4.00	12.45
FEB. 2018	7.50	15.50	6.00
MAR. 2018	4.00	8.00	25.55
APR. 2018	6.00	4.50	1.00
MAY. 2018	10.50	8.50	3.00
JUN. 2018	2.00	6.00	1.00
JUL. 2018	3.00	2.50	4.65
AVG.	4.83	5.33	8.86

SYSTEM DIAGRAM

