PROJECT SNAPSHOT

AQUA POINT
ADVANCED WASTEWATER TREATMENT SYSTEMS & SERVICES

OTIS, MA MUNICIPAL WASTEWATER TREATMENT PLANT

Groundwater Discharge Compliance on a Small Municipal Budget

September 10, 2020

DESIGN CHARACTERISTICS

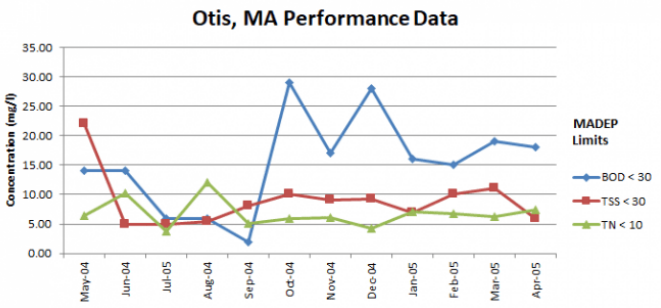
	Influent	Effluent
DESIGN FLOW (GPD)	30,000	30,000
BOD5 (mg/l)	250	< 30
TSS (mg/l)	250	< 30
TKN (mg/l)	50	–
AMMONIA?N (mg/l)	40	<2
NITRATE-N (mg/l)	–	<5
TOTAL-N (mg/l)	–	<10
FECAL (MPN/100ml)	–	<200

OVERVIEW

The town of Otis Massachusetts qualified for Rural Utility Service (RUS) funding from the Department of Agriculture in 1999 to provide sewer for a portion of the community. Their engineering firm Camp Dresser & McKee (CDM) selected an Aquapoint Bioclere™ wastewater treatment system because of the stability of the fixed-film treatment process and the low installation and operating costs. Bioclere's compact footprint also minimized land usage and the impact on the surrounding community. The treatment units are sealed, insulated and fed with warm air from the system's control building to combat the cold 5?C water that enters from an aged collection system in the winter months. The system is owned and operated by the municipality as part of a distributed network of wastewater infrastructure.

The project was permitted under Massachusetts Department of Environmental Protection (MADEP) Ground Water Discharge Standards requiring a level of treatment that would preserve the life of the drain field and reduce nutrient loading to the groundwater. Effluent from the dual train Bioclere trickling filter process is polished through a denitrifying deep bed sand filter and UV disinfection prior to discharge.

PERFORMANCE DATA



- System Commissioned: 1999
- Detectable Limit for BOD & TSS: 2 & 5 mg/l respectively
- Data Source: MA DEP Records

DATE	BOD5 (mg/l)	TSS (mg/l)	TN (mg/l)
MAY. 2004	14.00	22.00	6.46
JUN. 2004	14.00	5.00	10.24
JUL. 2004	6.00	5.00	3.76
AUG. 2004	6.00	5.50	12.00
SEP. 2004	2.00	8.00	5.10
OCT. 2004	29.00	10.00	5.88
NOV. 2004	17.00	9.00	6.16
DEC. 2004	28.00	9.30	4.33
JAN. 2005	16.00	7.00	7.10
FEB. 2005	15.00	10.00	6.70
MAR. 2005	19.00	11.00	6.27
APR. 2005	18.00	6.00	7.40
AVG.	**15.33**	**8.98**	**6.78**

SYSTEM DIAGRAM