



Application: Commercial		
	Influent	Effluent
FLOW	40,000 gpd	40,000 gpd
BOD₅	600 mg/l	<30 mg/l
TSS	250 mg/l	<30 mg/l
TKN	70 mg/l	
TN		<10mg/l

Lowes Plaza Pembroke, MA

This Aquapoint wastewater treatment plant, in a suburb south of Boston, serves three commercial shopping plazas and an office complex. Prior to its construction, two existing plazas, including several restaurants, retail outlets, and a supermarket, were operating on failing septic systems. The town's need to remediate the problem and the associated health risks, enabled a developer to build a third commercial plaza, providing a collection and treatment system for the surrounding commercial development.

Because of the existing local septic system problems and high flow rates to the plant, the treatment system was permitted under Massachusetts Ground Water Discharge standards (Effluent BOD<30, TSS<30, TN<10). With this level of treatment the life of the leach field will be extended and the integrity of the ground water preserved.

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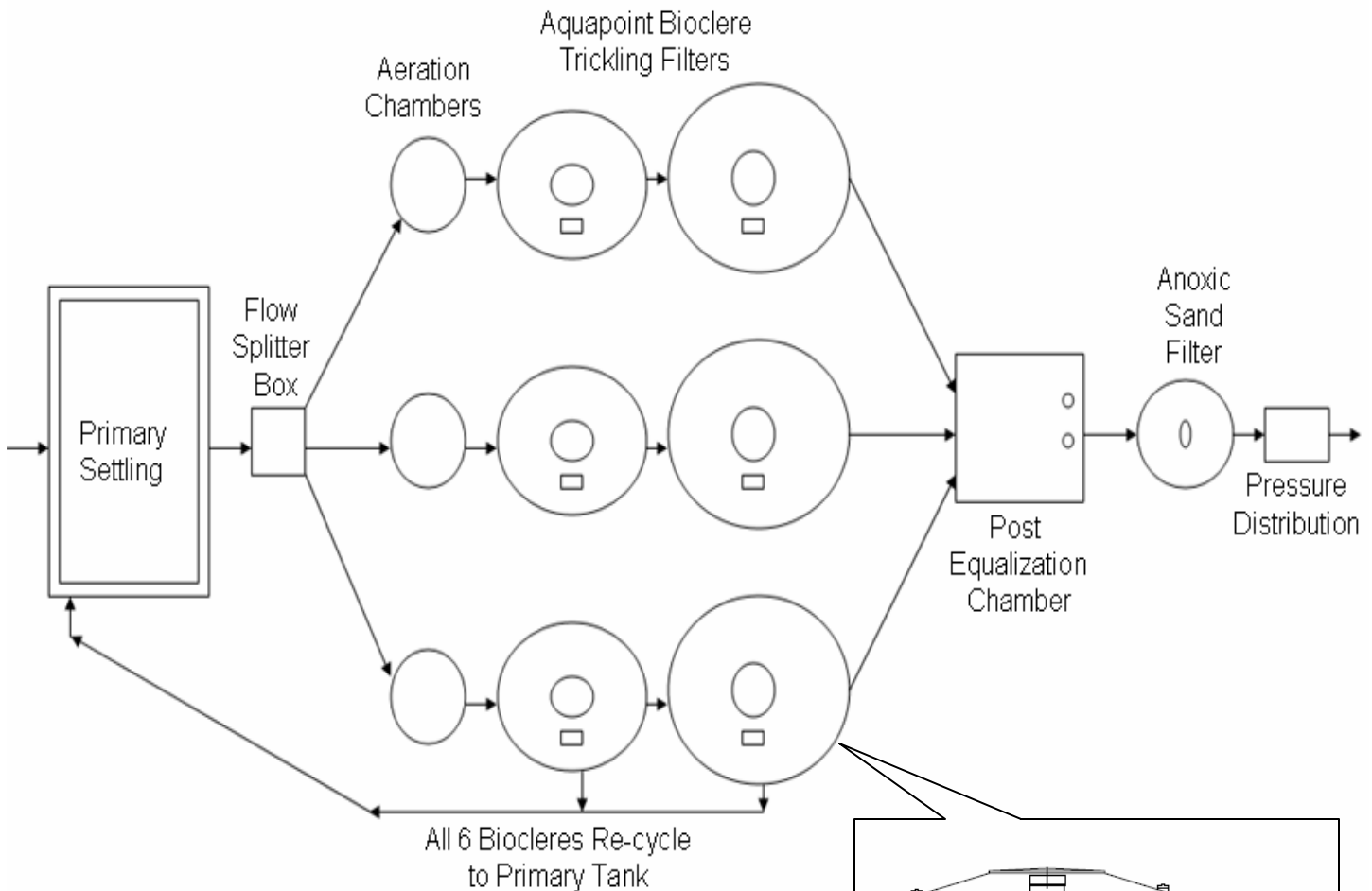
Treatment Components & Processes:

- Grease traps and a primary settling tank
- Three Aquapoint Submerged Aerated Reactors (SARs) in parallel
- Three parallel trains of dual stage Aquapoint Bioclere™ trickling filters
- First stage Bioclere™ of each series is sized to reduce BOD₅ and TSS concentrations
- Second stage Bioclere™ of each series is designed to nitrify the waste stream to <2mg/l ammonia
- The nitrified Bioclere™ effluent is re-circulated to the influent end of the primary settling tank where there is sufficient carbon to initiate denitrification and restore alkalinity.
- Final effluent from the second stage Bioclere™ flows to an equalization chamber that feeds a continuous flow, anoxic sand filter.
- The denitrifying sand filter is dosed with methanol to sustain anoxic conditions and a healthy biomass
- Sand filter effluent is distributed under pressure to a soil absorption field under Lowes parking lot

* See design schematic on reverse side

Lowes Plaza WWTP Diagram

Treatment Plant Footprint: 60 ft X 70 ft



Bioclere Re-circulation System:

- Sends secondary sludge from the Bioclere™ clarifier to the primary tank. Bioclere™ produces minimal sludge per pound of BOD.
- Recycles some of the treated Bioclere™ effluent to the primary tank where it dilutes and buffers influent organic concentrations.
- Transfers nitrified wastewater to the primary tank where there is enough carbon present in the influent wastewater to initiate denitrification and restore alkalinity.

