

**CLIENT:** Wayne Farms, LLC, Pendergrass, Georgia  
Wastewater Treatment/Nutrient  
Removal/Recycling System



### BACKGROUND:

Wayne Farms, LLC operated a single tank sequencing batch reactor (SBR) treatment system with discharge to an onsite land application system (LAS). Due to issues associated with limitations to land application of the treated wastewater, Wayne Farms received an NPDES permit for direct discharge. Also, in looking ahead at potential water issues, Wayne Farms wanted the ability to recycle wastewater in the future.

The upgraded MBR system integrated/adapted the existing bioreactor tank and lagoons to work with the new ultrafilter membranes. As a result, the upgraded system effluent meets NPDES discharge requirements for direct discharge and the USDA FSIS requirements of reuse water in poultry plants.

### PROJECT REQUIREMENTS:

- Design/build of an upgraded system to meet NPDES discharge limits in accordance with the new permit
- Meet or exceed USDA standards for reuse water at poultry processing plants
- Reduction of nitrogen, phosphorus, BOD, and TSS
- Utilize as much of the existing system as possible and practical

### SYSTEM COMPONENTS:

- Phosphorus removal ponds
- Anoxic Pond (De-nitrification)
- Bioreactor with membrane separation (MBR System)
- Ultra-violet disinfection
- Effluent monitoring with cascade aeration
- Reuse water tank
- Biosolids storage ponds

