

**SECTION 44 42 35
FLOATING DECANTERS**

PART 1 GENERAL

1.01 SYSTEM DESCRIPTION

- A. Floating decanter system, featuring floating sub-surface weirs to decant clarified supernatant from Aerobic Digesters 1 and 2 and convey the decant water to the decant common header.
- B. Provide floating decanter system, including, but not limited to, weir, float, flexible hose, or articulated collection arm, flanged or barbed connections, mooring system, lifting lugs, guiding brackets, and miscellaneous appurtenances as necessary.

1.02 DESIGN REQUIREMENTS

- A. Floating decanter system shall be delivered completely assembled or in convenient sections as permitted by common carrier and required for installation.
 - 1. Basin Quantity: Three.
 - 2. Inside Dimensions:
 - a. Basin Width: 36 feet.
 - b. Basin Length: 36 feet.
 - c. Side Water Depth, Maximum: 22 feet.
 - d. Side Water Depth, Minimum: 16 feet.
 - e. Top of Wall: 24 feet.
- B. The gravity decanter shall have a support system for when the basin is emptied or when the water level is lower than the decanter discharge wall penetration. The mooring support system may be attached to the walls and/or the floor of the digester, and will act as guides for the decanter travel.
- C. Design the flotation assembly such that its center of gravity is always below the water line.

1.03 SUBMITTALS

A. Action Submittals:

1. Shop Drawings:

- a. Make, model and weight of each floating decanter assembly.
- b. Complete catalog information, specifications and identification of materials of construction for decanter assembly and related equipment.
- c. Certified detail mechanical drawings showing equipment dimensions, arrangement, assembly, including locations and type of connections and weights of major equipment and components.
- d. Factory finish system.

B. Informational Submittals: Manufacturer's Certificate of Proper Installation, in accordance with Section 01 43 33, Manufacturers' Field Services.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Site properly packaged for ease of handling and to minimize damage during shipping.
- B. Handling and storage of items provided hereunder shall be in strict accordance with manufacturer's printed instructions. Care shall be taken not to damage components and accessories.

PART 2 PRODUCTS

2.01 GENERAL

- A. Like items of equipment specified herein shall be the end products of one manufacturer in order to achieve standardization of appearance, operation, maintenance, and manufacturers' services.
- B. Coordinate floating decanter configuration with equipment, such as aeration piping, that will physically interface with decanter support system to ensure proper functioning of system.
- C. Equipment Supplier:
 1. Aqua Aerobics, Inc. 6x4x4 Floating Weir.
 2. Or equal.

2.02 PHYSICAL CHARACTERISTICS

- A. Overflow Weir: Each weir shall be constructed of Type 316L stainless steel and may be circular or rectangular in shape. The overflow weir shall be located below the float assembly.

B. Floatation:

1. Each unit shall be equipped with a one-piece float, fabricated of Type 316L stainless steel or fiberglass composites. The float shall be filled with two component polyurethane foam of the closed cell type. Floats shall be constructed as a single unit, filled with closed cell polyurethane foam having a minimum density of 2 pounds per cubic foot, and shall be completely sealed watertight.
2. The float shall be circular or rectangular in shaped and shall be larger in size than the intake weir.
3. The float shall be provided with 316L stainless steel lifting lugs and support legs to support the assembly when the water level in the basin is lower than the decanter discharge pipe or when the basin is emptied.

C. Discharge Hose or Articulated Collection Arm:

1. Each floating decanter shall include a discharge hose or articulated collection arm of sufficient size to permit vertical movement of the floating weir and provide sufficient capacity to handle design decant flowrate specified herein.
2. Discharge hose may be a flexible hose with Type 316L stainless steel flanged hose connection barb and clamps and/or flanged fittings to connect the floating decanter to the flanged wall penetration, or an articulated collection arm with a rotating elbow and/or flexible joints with type 316L stainless steel flanged connections to connect the floating decanter to the flanged wall penetration.

D. Restrained Mooring System:

1. Each floating decanter shall be moored with a system to hold the decanter in place in the basin.
2. Mooring system shall be Type 316L stainless steel vertical mooring posts.
3. Vertical mooring posts may be attached to the walls of the digester, the floor of the digester, or both.

E. Accessories: Templates and special wrenches or tools necessary for proper installation and maintenance of the decanter shall be supplied.

2.03 FUNCTIONAL CHARACTERISTICS

- A. Overflow Weir: The overflow weir shall collect and redirect water to be evacuated into the discharge hose.
- B. Floatation: The float shall prohibit all floating material from being sucked into the overflow weir.

- C. Discharge Hose or Articulated Collection Arm: Sufficiently sized to convey decant from the aerobic digesters.
- D. Restrained Mooring System: Each floating decanter shall be moored to be able to follow the changes in water level.
- E. Accessories: Templates and special wrenches or tools necessary for proper installation and maintenance of the decanter shall be supplied.

2.04 PERFORMANCE CHARACTERISTICS

- A. Maximum Allowable Water Level (HWL): 22 feet.
- B. Minimum Allowable Water Level (LWL): 16 feet.
- C. Discharge Pipe Centerline: 5 feet below LWL.
- D. Discharge Rate per Decanter:
 - 1. Assuming series operation and decant from primary digester only, 24-hour cycle time, one 1-hour decant period per day:
 - a. Minimum: 50 gpm.
 - b. Maximum: 250 gpm.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in strict accordance with the manufacturer's written instructions.

3.02 FIELD TESTING AND FACILITY STARTUP

- A. Field Testing and Facility Startup shall be in accordance with the requirements of Section 01 91 14, Equipment Testing and Facility Startup.
- B. Facility startup specifies the order and prerequisites for the following tests of the equipment:
 - 1. Field functional testing.
 - 2. Software operational testing.
 - 3. Performance testing.
 - 4. Demonstration testing.
- C. All Field Testing and Facility Startup shall be performed using a qualified representative provided by the Manufacturer as specified in Section 01 91 14, Equipment Testing and Facility Startup, Section 01 43 33, Manufacturers' Field Services, and as elaborated upon in this section.

3.03 TESTS AND INSPECTION

A. Manufacturer's Representative:

1. Present at Site or classroom designated by Contracting Officer to provide the following:
 - a. 1 person-day for installation assistance, inspection, and certification of installation.
 - b. 1 person-day for component testing.

END OF SECTION

