



## **OIL COALESCING SEPARATOR SPECIFICATIONS MODEL \_\_\_\_\_**

Pollution Control Systems, Inc. (PCS) is pleased to provide the following equipment specifications for your consideration.

One (1) prefabricated carbon steel Oil Coalescing Separator (OCS) constructed in accordance with the plans and specifications stated herein. The OCS removes free and dispersed non-emulsified oil from the influent wastewater and produces an effluent containing no more than 20 ppm of oil droplets with 0.85 specific gravity and 20 microns in size or larger. The unit shall handle a maximum flow rate of \_\_\_\_\_ gallons per minute, with less than 200 mg/l of suspended solids, a min/max temperature of 40/140 degrees F., 0.85 specific gravity oil, and 7.5-8.5 pH. The oil separation process shall utilize coalescing media packs fabricated from an oleophilic, cross-corrugated synthetic material that will enhance oil droplet deposition on the media surfaces.

### **A. *Materials of Construction***

All tank vessels will be fabricated of 1/4" structural grade ASTM designated A-36 steel plates joined by arc welding with fillets of adequate section for the joint involved. All walls will be continuous and watertight and will be supported by structural reinforcing members where required. Connections will conform to the requirements of the American Welding Society's Code and will develop the full strength of the member.

The Coalescing pack-media shall be constructed of PVC and contained in a frame made of 304 stainless steel.

### **B. *Surface Preparation and Coating***

Any sharp edges shall be ground to produce a radius and all imperfections such as skip welds, de-laminations, scabs, slivers and slag shall be corrected prior to abrasive blasting. All welds shall be ground smooth to eliminate high spots, lumps, sharp edges and porosity. Any holes, depressions or pockets in welds will be corrected and all weld spatters will be removed.

All interior surfaces shall be prepared to SSPC-SP10 (near white blast) and covered with one (1) coat of High Solids Epoxy to produce a total 8-10 mils total dry film thickness (TDFT).

All exterior surfaces shall be prepared to SSPC-SP6 (commercial blast) and coated with one (1) coat of Hi-Build Epoxy to produce a total 8-10 mils total dry film thickness (TDFT).

### **C. Influent Chamber**

The influent chamber shall utilize a non-clogging, energy dissipating area that shall disperse the influent flow evenly across the width of the coalescing pack. Any heavy solids will separate in the inlet chamber and settle into the sludge collection chamber.

### **D. Coalescing Chamber**

The coalescing chamber shall contain synthetic, oleophilic, oil coalescing media fabricated of PVC and configured to provide a minimum of 48 square feet of coalescing surface area and a minimum of 95% of void to volume area per cubic foot of media volume.

The media design shall insure a sinuate flow through the pack to enhance oil droplet deposition on the media surface. Oil will coalesce and flow upward along the media surface to the top of the coalescing chamber where it will overflow into the oil collection chamber.

The plate spacing shall be 0.75" maximum and the coalescing media design shall form a minimum of 60-degree settling plane to enhance particulate solids removal.

The media shall be encased in a 304 stainless steel frame that can be easily removed from the separator. The containment frame shall allow the pack to be removed from the separator, and to allow ease of cleaning, or media replacement.

### **E. Solids Chamber**

The solids chamber (hopper) for settled solids shall be located directly below the coalescing media pack, equipped with pitched sides, baffles and one (1) \_\_\_\_" outlet nozzle per hopper.

The hopper design shall isolate settled solids from the wastewater stream, and expose a minimum of 85 percent of the media pack bottom area to allow solids to drop unobstructed out of the media.

### **F. Polishing Pack Chamber (Optional)**

The polishing pack chamber contains reticulated oil coalescing media with a frame installed after the Coalescing Chamber media and before the Oil Collection Chamber. The purpose of the media is to coalesce and remove sub 20-micron oil droplets from the wastewater.

### **G. Oil Collection Chamber**

The oil collection chamber shall be located toward the outlet end of the coalescing chamber and shall have a fixed weir for removal of the collected oil.

The chamber shall be equipped with one (1) \_\_\_\_" gravity outlet nozzle located on the side of the separator.

#### **H. Effluent Chamber**

The effluent leaving the coalescing packs shall pass under an oil retention baffle then over an adjustable weir into the effluent trough. The liquid level in the separator shall be determined by the location of the adjustable weir plate.

#### **I. Cover and Hatches**

The separator shall be completely covered with removable and gasketed cover(s) to allow access to the media pack and solvent compartments.

The covers shall be suitably reinforced, and designed to provide a vapor tight seal for proper ventilation.

#### **J. Vents**

The separator shall be furnished with a minimum of two (2) \_\_\_\_" vapor vent coupling connections to allow venting of any vapors or fumes that may collect.

#### **K. Nozzles**

All connections shall be 150 lb. flanged unless otherwise specified. Nozzles for connections 2" and smaller shall be a minimum of Schedule 40 pipe. Connections greater than 2" shall be a minimum of Schedule 40 pipe flanges. Flange facing and drilling shall conform to ANSI B16.5. Nozzles will be flush with the inside walls of the separator.

#### **L. Guarantee**

PCS will guarantee for one (1) year from the date of shipment that the vessel and all component equipment will be free from defective materials and workmanship. PCS will furnish replacement parts for any component considered in the opinion of PCS to be defective, whether of his or other manufacturer during the guarantee period.