

API Series Steel Oil/Water Separator Engineering Specification API-5 through API-600

SECTION 1.0 OIL/WATER SEPARATOR

Performance

The Pan America Environmental API Series Oil/Water Separators are designed to produce an effluent concentration of 100 mg/l or less of oil droplets 150 micron and larger of non-emulsified, free and dispersed oils.

1.01 Design

The oil/water separator will be designed and fabricated per the following specifications. Rectangular tankage with features as described designed per API #421 Design & Operation of Oil/Water Separators Manual, February 1990 and Stokes law. The design will incorporate flexible flow rating capability based on application parameters.

1.02 Influent Chamber

Influent flow enters the clog proof influent diffuser pipe and is immediately spread out across the depth and width of the chamber. Any readily settleable solids drop to the bottom of the separation chamber.

1.03 Oil/Water Separation Chamber (Flopak optional)

The separation chamber is to be packed with Flopak cross-fluted coalescing media. The media pack will be designed to create a quiescent zone, a laminar flow pattern to facilitate the impingement of oil on the media, and will provide numerous droplet impact sites and changes of flow direction. The media shall have a 60-degree cross-flute angle.

1.04 Oil Skimmer and Reservoir

The separator shall be provided with a fixed oil skimming weir integrated with an oil reservoir. The oil skimmer is to be located at the effluent end of the separation chamber. An oil outlet is located on tank exterior.

1.05 Clean Water Effluent Chamber

The cleansed water will flow under the oil retention baffle, over the water weir and into the effluent chamber. This chamber is to have the capability to be expanded at the factory by modifying the standard integral chamber so a greater volume of water is available for pump suction directly from the API tank.

1.06 Separator Cover

The separator is to have a multi-piece cover that provides complete closure of the tank. The separator cover will be mounted to the tank via zinc plate hardware and vapor sealed with an industrial grade closed cell, compressible PVC gasket.

1.07 Fittings

All fittings are to be FNPT coupling up to 3". Fittings larger to be 150# FF ANSI B16.5 flange.

Section 2.0 Materials of Construction

2.01 Steel Construction

Tank shell, baffles, cover and external structural members shall be constructed of A-36 carbon steel. Welded joints are double welded.

2.02 Surface Preparation

Interior surfaces shall be prepared to an SSPC-SP10 near white metal blast. Exterior surfaces shall be prepared to an SSPC-SP6 commercial blast.

2.03 Coatings

Interior coating shall be a self-priming, coal tar epoxy (12 DFT). Exterior coating shall be primer coat followed by industrial epoxy coat (6 DFT). Color is Rain Forest Green.

2.04 Piping

Internal piping shall be ASTM, A-53 steel.

2.05 Cover Gasketing

Closed cell, industrial grade PVC constructed vapor sealed cover gasketing shall be provided. No neoprene or EPDM shall be permitted.

2.06 Manufacturer

The manufacturer of preference shall be: Pan America Environmental 2385 Hammond Dr. Ste 3 Schaumburg, IL 60173 - 847/882.5855 - Fax: 847/882.5630

2.07 Warranty

Pan America Environmental warrants its products to be free of defect in materials and workmanship for a period of one year from the date of shipment.

2.08 Coalescing Media (optional)

Cross-fluted, oleophilic Flopak coalescing media shall be provided as manufactured by Pan America Environmental.

2.09 V-Hopper (optional)

The separator shall have a V-shaped solids accumulation chamber located under the coalescing media. This chamber will provide temporary solids storage. The chamber walls are to be pitched at 45 degrees to assure simple and thorough solids removal. Dual outlet ports will be provided for sludge removal.

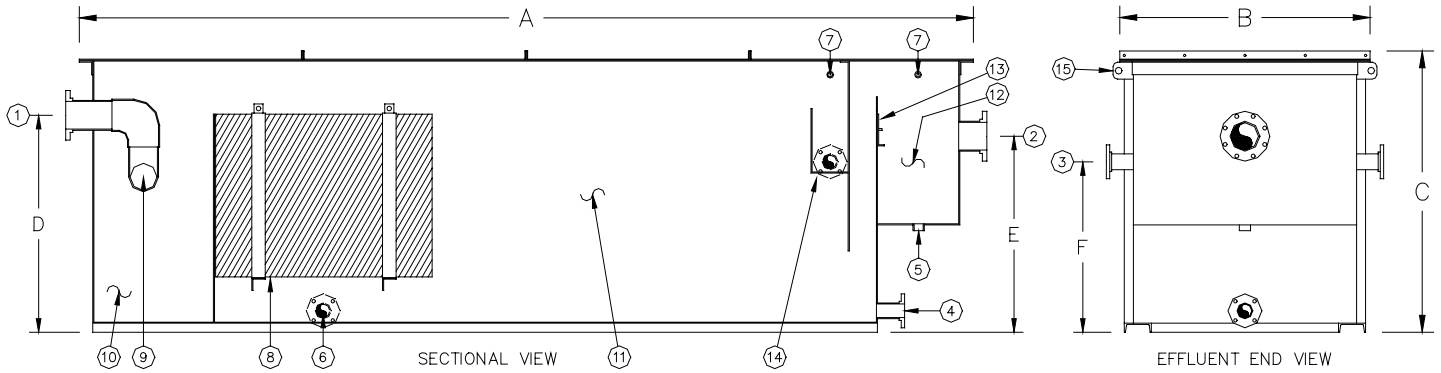
2.10 Sludge Auger (optional)

The API V-hopper(s) will be provided with a screw auger to convey settled solids to the outlet port. The auger will be provided with a 12-20 rpm, reduced gear drive system. A Nema 4 on/off control panel is provided. 230V/3pH/60Hz. Power required.

2.11 Surface Drag Skimmer (optional)

A mechanical surface drag skimmer assembly is provided to sweep the floating solids (float) from the effluent end of the separation chamber toward the influent end. The skimmer consists of stainless skimmer flights and Buna-N wiper blades, steel flight chain, sprockets, variable speed drive, sprocket shafts, bearings and chain adjustment bearing frames. The flights will be bolted to the roller chain spanning the width of the tank and will be designed to wipe the tank sides and float ramp. The chains will ride on steel sprockets. A Nema 4 on/off control panel is provided. 230V/3pH/60Hz. Power required. Alternate wiper materials can be provided based on contaminants in wastestream.

API Reference Drawing



Model	A	B	C	D INLET	E OUTLET	WEIGHT EMPTY (LBS)	WEIGHT FULL (LBS)	OIL RES. VOL.	INLET SIZE	OUTLET SIZE	OIL OUTLET SIZE	SLUDGE OUTLET SIZE
API-25	13'-0"	4'-5"	4'-3"	3'-3"	3'-0"	2700	6900	30	3"	3"	3"	3"
API-50	15'-9"	4'-5"	4'-3"	3'-3"	3'-0"	3200	8500	30	4"	4"	3"	3"
API-100	25'-0"	5'-6"	5'-0"	4'-0"	3'-6"	6100	20410	40	6"	6"	3"	3"
API-150	25'-0"	7'-6"	5'-6"	4'-6"	4'-0"	8200	30080	40	6"	6"	4"	3"
API-200	33'-0"	7'-6"	5'-9"	4'-9"	4'-0"	10090	41330	50	6"	6"	4"	3"
API-250	42'-0"	7'-6"	5'-9"	4'-9"	4'-0"	12500	52800	50	6"	6"	6"	4"
API-300	43'-0"	9'-6"	5'-10"	4'-10"	4'-6"	15400	68820	70	8"	8"	6"	4"
API-400	50'-0"	9'-6"	5'-10"	4'-10"	4'-6"	17550	80000	70	8"	8"	8"	4"
API-500	62'-0"	9'-6"	5'-10"	4'-10"	4'-6"	22100	100000	70	10"	10"	8"	4"
API-600	60'-0"	10'-2"	6'-2"	5'-2"	4'-10"	25300	128500	80	10"	10"	8"	4"

ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION
1	1	INLET	6	1	SLUDGE OUTLET	11	1	SEPARATION CHAMBER
2	1	OUTLET	7	2	VENT	12	1	EFFLUENT CHAMBER
3	2	OIL OUTLET	8	1	FLOPAK MEDIA (OPTION)	13	1	WATER WEIR
4	1	DRAIN	9	1	INLET DIFFUSER	14	1	OIL RESERVOIR/BAFFLE
5	1	DRAIN	10	1	INLET CHAMBER	15	4-8	LIFT LUG

*Dimensions, capacities for reference only and are not to be used for construction

*Model numbers represent nominal flow rates in GPM