



# Above Grade Fiberglass Flat Bottom Systems - Model FB Oil Water Separators

Pan America Environmental's FB Series, fiberglass oil/water separators are a gravity/coalescing design for removal of free and finely dispersed oil droplets from various wastestreams. The use of our proprietary Flopak, cross-corrugated, oleophilic, coalescing media provides predictable oil removal through impingement coalescence. Performance: 10 mg/L 30 micron free, dispersed and non-emulsified oil droplets. The FB fiberglass design is just one of 10 different oil/water separator designs from Pan America Environmental that can be used singularly or in combination with other treatment processes such as emulsion cracking, DAF & clarifier pretreatment.

Full, turnkey systems can be provided with many types of options and custom configurations can be provided tailored to the particular project requirements or wastestream needs. Five separator sizes are offered in this series for flow rates up to 3 GPM.

## Options (partial)

- Influent/effluent/oil/sludge pumping systems
- Elevation stand
- Retpak secondary coalescer
- Hi-temp upgrade
- Anchor brackets
- Oil sight glass
- Walkways
- Filter systems

## Applications

- Groundwater remediation
- Power plant water treatment
- Refueling depot runoff
- Machining coolant oil removal
- Vehicle washwater treatment
- Oil spill recovery
- Bilge/ballast water treatment
- Stormwater runoff
- Mobile separation system
- Equipment maintenance facilities
- Aircraft wash racks
- Compressor condensate
- Tank farm tank bottoms
- R.O. Filter pre-treatment
- Trench water treatment
- DAF/clarifier pre-treatment
- Hydraulic fluid tank dewatering

Flow Range 3 GPM



**Features:**  
Dion 6695 fiberglass resin  
Flopak  
Coalescing Media  
Oil Reservoir  
Cover  
Oil Skimmer

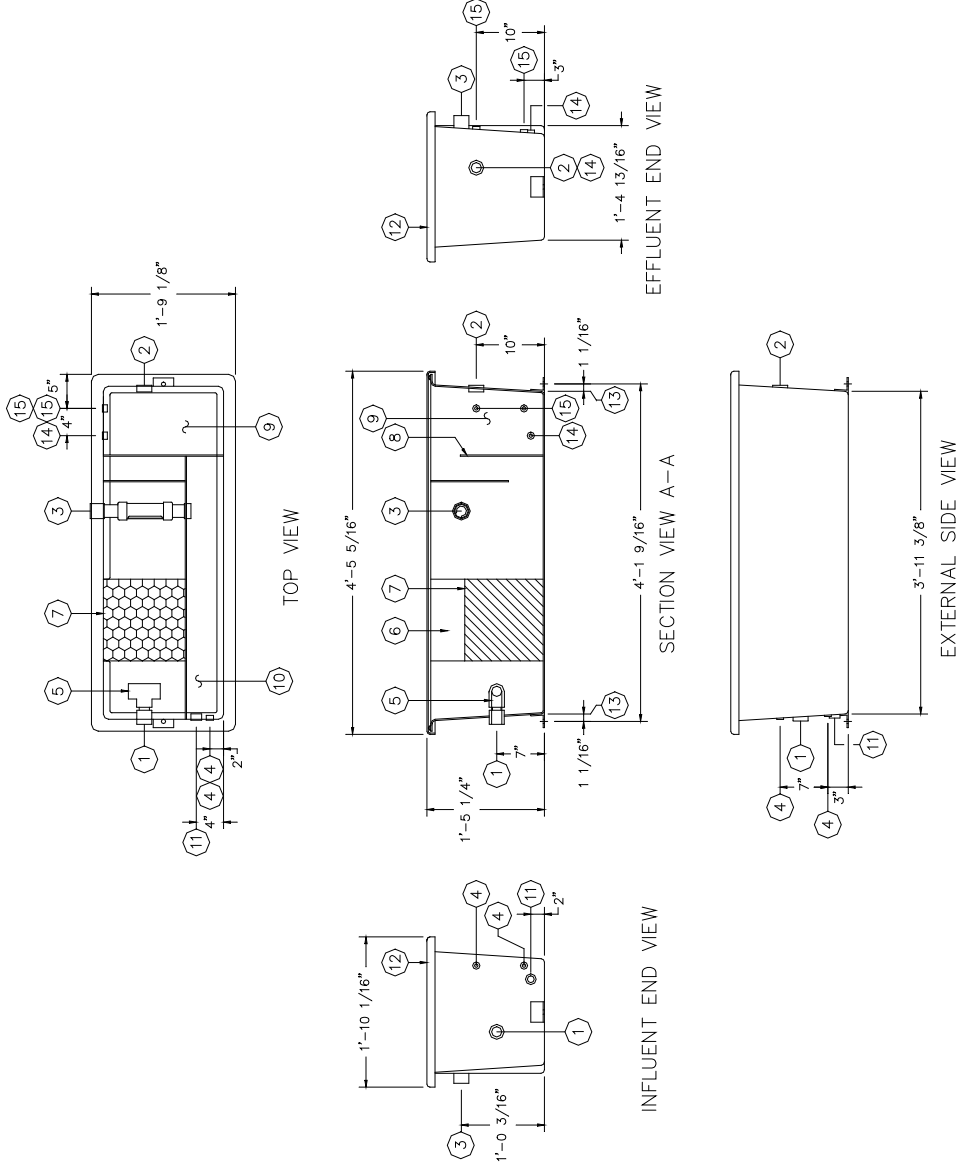
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# FB Series Fiberglass Flat Bottom Oil/Water Separator Product Detail



Design and Dimensions subject to change without notice.

Information not for construction

Item	Qty	Description	Item	Qty	Description	Item	Qty	Description	Item	Qty	Description
1	1	Inlet 1.5" NPT	4	2	1/2" NPT Multi-use fitting	7	1	Flopak Media	10	1	Oil Reservoir 10 Gal. Vol.
2	1	Outlet 1.5" NPT	5	1	Inlet Diffuser	8	1	Water Weir	11	1	1" NPT Oil Drain
3	1	Oil Outlet 1.5" NPT	6	1	Separation Chamber	9	1	Effluent Chamber	12	1	Cover
									13	2	Anchor Pad (option)
									14	1	1/2" NPT (option)
									15	2	1/2" NPT (option)



# Above Grade Fiberglass Flat Bottom Systems-Model FB Oil/Water Separators

## Engineering Specification Model FB1

### Section 1.0 Equipment Design & Construction

#### Performance

The Pan America Environmental FB Series fiberglass Oil/Water Separators are designed to produce an effluent concentration of 10 mg/l or less of oil droplets 30 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.

#### 1.03 Oil/Water Separation Chamber

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 impact sites and changes of flow direction. The media shall have a 60-degree cross-flute angle.

#### 1.04 Cylindrical Oil Skimmer

The separator shall be provided with an adjustable cylindrical oil skimmer that allows the skim head to be readily removed or adjusted without tools. The skim head rotation collar will be provided with a Buna-N seal. The oil skimmer is to be located at the effluent end of the separation chamber. The skimmer shall not require lubrication for operation.

#### 1.05 Clean Water Effluent Chamber

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

#### 1.06 Oil Reservoir

An integral oil reservoir is to be provided for the temporary storage of separated oils. This chamber is located at the effluent end of the separator. The reservoir will have fittings for pump suction, high/low level switch accommodation, vent and optional sight glass installation.

#### 1.07 Separator Cover

The separator is to have a single piece cover that provides complete closure of the tank. The separator cover will be mounted to the tank via quick release hardware and vapor sealed with an industrial grade closed cell; "D" shaped compressible EPDM gasket.

#### 1.08 Fittings

All wetted fittings must be fiberglass constructed NPT thread, integrally bonded via fiberglass bond to the tank for permanent, leak proof fitting seal. Tank penetrating, gasketed, plastic bulkhead fittings or couplings are not to be used.

### Section 2.0 Materials of Construction

#### 2.01 Fiberglass Construction

Tank shell, baffles and cover shall be male molded of premium grade DION 6694/95 high cross-link density FRP/resin composite utilizing mat and chopped roving construction with a minimum of 25% chopped fiberglass fiber to resin mix. An ultraviolet stabilized gel coat shall be used to coat external surfaces 16-20 mils dft. Finish color to be white.

#### 2.02 Piping

Internal piping shall be type 1, grade 1, ASTM 1785, schedule 40 PVC.

#### 2.03 Coalescing Media

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

#### 2.04 Cover Gasketing

Closed cell, industrial grade, "D" shaped EPDM constructed vapor sealing cover gasketing shall be provided. No neoprene shall be permitted.

#### 2.05 Manufacturer

The manufacturer of preference shall be:  
Pan America Environmental  
950 N. Rand Rd. Ste 120  
Wauconda, IL 60084 - USA  
847/487.9166 Fax: 847/487.9218

#### 2.06 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.



## Above Grade Fiberglass Flat Bottom Systems-Model FB Oil/Water Separators

### FB Series Fiberglass Oil/Water Separator Product Options

Option	Description
AQAM Filter Systems	AQAM (Alkyl Quaternary Ammonium Montmorillonite) filter systems can be provided to remove trace hydrocarbons, sheens, DNAPLs, slightly soluble chlorinated hydrocarbons and high molecular weight organics from the FB effluent. Contact Pan America to determine proper filtration needs for your application.
Air Stripper	To strip BTEX and VOC constituents from the separator effluent. Contact Pan America with your application details for sizing and configuration.
Alternate Media Construction	Standard Flopak media is PVC, CPVC, polypropylene, stainless & galvanized media are available. Contact PAE to determine proper media type for your application. Media plate spacing is available in 1/2", 3/4" & 1.2".
Carbon Filtration Systems	GAC carbon filters can be provided to remove contaminants after the FB separator. Contact Pan America to determine proper system needs for your application.
Effluent Filter Systems	Solids filter systems can be provided to remove filterable solids from the FB effluent. Contact Pan America to determine proper filtration needs for your application.
Effluent Pumpout System	Centrifugal pump with level switches & Nema 4 control panel, base mounted. 3ph/60Hz power req'd. FB effluent chamber must be expanded to accommodate pumpout.
Elevation Stand	Epoxy coated steel stand to elevate tank to desired level. Standard deck height is 30". Full platforms & walkways with ladders or stairways can be designed where required or desired
External Storage, EQ Feed Tanks	A wide variety of tank volumes can be supplied for your water, product and sludge holding needs. Flat bottom and cone bottom designs constructed in polyethylene, fiberglass, steel & stainless steel can be provided and designed to fit your application and facility.
Emulsion Cracking Systems	Emulsion cracking systems can be provided to remove oil-in-water emulsions prior to the separator. Contact Pan America to determine proper system needs for your application.
Freeze Protection	Two (or more) immersion heaters mounted in tank. Heaters are thermostat controlled, 0-100 deg. F thermostat and Nema 4 housing.
High Temperature Design	Flopak coalescing media is constructed of CPVC or other materials for temperature resistance up to 200 deg. F.
Hold Down Brackets	Fiberglass L-brackets bonded to tank for bolt down to installation surface.
Influent Feed System	Air operated, diaphragm pump with air controls, sump level switches & Nema 4 control panel, base mounted. Electric diaphragm pumps available. Any influent feed pumps to be used must be reviewed for potential emulsifying capability.
pH Adjustment Systems	pH adjustment systems can be provided to maintain pH levels prior to or after the FB separator. Contact Pan America to determine proper system needs for your application.
Oil Pumpout System	Air operated, diaphragm pump with air controls, level switches & Nema 4 control panel, base mounted. Electric gear or progressive pump systems also available.
Retpak Secondary Coalescer	High surface area, reticulated, secondary coalescing media for polishing flow after standard Flopak media to provide increased performance.
Sight Glass	Two automatic, brass valves with tempered sight glass and protection rods mounted in oil reservoir. If glass is broken check ball stops outflow from reservoir.
Sludge Pumpout System	Air operated, diaphragm pump with air controls & Nema 4 control panel, auto on/off timer, base mounted. Electric pumps available. 1 - 100 GPM Electrically driven diaphragm pumps or other pump types are also available.



# Above Grade Fiberglass Flat Bottom Systems-Model FB Oil/Water Separators

## FB Series Fiberglass Oil/Water Separator Product Applications

Application	Uses and Products Removed
Groundwater Remediation	Contaminated ground water treatment for removal of gasoline, diesel, JP, jet fuels, LNAPL, DNAPL, motor oils, kerosene, fuel oils, BTEX and more.
Heat Treating	Heat treating facility. Oily wash solution can be continuously treated.
Industrial Process Water	Hydraulic fluids, machining coolant/cutting fluid tramp oil removal, compressor condensate, machined parts rinse water.
Military Wash Racks	Field equipment, jet wash, tracked equipment wash uses for typical fuels, oils, solids & BTEX removal. Complete treatment systems are offered.
Petro-Chemical	Refineries, chemical compounding companies, hydrocarbon based chemical bases such as cumene and other materials.
Power Generation	Generator lube oils, hydraulic oils, fuels. Stationary & mobile systems offered.
Shipping	Ballast & bilge water treatment. Off-loading of water to shore based treatment system, bunker & diesel fuels removal.
Steel Mills	Rolling mill hydraulic oil/water extraction, compressor condensate, stormwater runoff, drain water.
Stormwater Treatment	Parking lot runoff, railroad re-fueling depot runoff, gas station runoff, bridge runoff.
Tank Farms	Fuel, oil storage tank farms for removal of water from tank bottoms. Stationary and mobile systems are offered.
Vehicle Wash Racks	Removal of gasoline, diesel fuel, motor oils, transmission fluids, hydraulic fluids, jet fuels, aircraft fuels and lubricants when washing jets, cars, trucks, heavy equipment, railroad locomotives and equipment.



# Above Grade Oil/Water Separators Below Grade

## Oil/Water Separator Data Sheet

**Please provide the following information for equipment sizing & recommendations:**

Company name and location:

Describe type of facility where wastestream is located:

Origin of wastestream:

Wastestream flow rate: GPM Min:\_\_\_\_\_ GPM Norm:\_\_\_\_\_ GPM Max:\_\_\_\_\_

Hours per day this wastestream flows:\_\_\_\_\_ Days per week:\_\_\_\_\_

Type(s) of oils in the flow:

State of oils: (please circle one)

- Free: droplets 150 micron diameter & greater
- Dispersed: droplets from 20 to 150 micron diameter
- Mechanically emulsified: droplets less than 20 micron diameter
- Chemically emulsified: droplets less than 20 micron diameter combined with water (& other) molecules via chemical bond
- Dissolved oil: solubilized oil or emulsion in a stable state

Concentration of oils in mg/l or % of total flow:\_\_\_\_\_ Specific gravity of oils:\_\_\_\_\_

Viscosity of oils:\_\_\_\_\_poise at\_\_\_\_\_deg. F pH of wastestream:\_\_\_\_\_

Water operating temperature: High\_\_\_\_\_deg.F Norm\_\_\_\_\_deg.F Low\_\_\_\_\_deg.F

List types of contaminants in wastestream:

### Solids

Define the type(s) of solids present:

Describe solids characteristics: ie: hard, soft, slimy:

Do the solids: stay in suspension? \_\_\_\_\_  
sink? \_\_\_\_\_  
float? \_\_\_\_\_

Specific gravity of solids:\_\_\_\_\_

Solids concentration in mg/l or % of flow:\_\_\_\_\_

Have any discharge requirements been established? (if so please list)

If an existing system is being used please provide a sketch of the process flow and components.