

ACS Environmental

VEW Series Vehicle/Equipment Washwater Treatment System Engineering Specification

Models: VEW-2 through VEW-16

SECTION 1.0 EQUIPMENT DESIGN & CONSTRUCTION

Performance

The ACS VEW Series washwater treatment systems are designed to produce an effluent concentration of 10 mg/l or less of oil droplets 30 micron and larger with non-emulsified, free and dispersed oils at influent. By virtue of our coalescing media and tank designs readily settleable solids are also removed. All filterable solids are removed down to 10 micron (nominal). Removal of free trace hydrocarbons, dispersed oils, sheens, slightly soluble chlorinated hydrocarbons and high molecular weight organics.

1.01 System Components

The VEW system shall consist of the following components:

- OS Series Oil/Water Separator
- Secondary Coalescer
- Effluent Transfer pump with Nema 4 control panel
- Effluent Solids Filter
- Carbon Steel Skid

1.02 Oil/Water Separator Design

The OS series oil/water separator will be designed and fabricated per the following specifications. Rectangular tankage with features and components 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.

1.03 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 V-shaped solids accumulation chamber located directly under the coalescing media bundle.

1.04 Oil/Water Separation Chamber

The separation chamber is to be packed with 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.

1.05 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.

1.06 Solids Accumulation Chamber

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.

1.07 Clean Water Effluent Chamber

The cleansed water will flow under the oil baffle, over the water weir and into the effluent chamber. The effluent transfer pump will draw flow from a suction fitting in this chamber.

1.08 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, compressible PVC gasket.

1.09 Tank Vent

The oil outlet can be used as tank vent by plumbing in a PVC tee. If separate vent fitting is required ACS can provide an individual coupling located wherever desired.

1.10 Fittings

All wetted fittings must be fiberglass constructed, integrally bonded via fiberglass bond to the tank for permanent, leak proof fitting seal. Tank penetrating, gasketed 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 molded of premium grade DION 6694/95 resin 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.

2.02 Piping

Internal piping shall be type 1, grade 1 ASTM D1785, schedule 40 PVC. External piping shall be type 1, grade 1 ASTM D1785, schedule 80 PVC.

2.03 Coalescing Media

Cross-fluted, oleophilic, PVC coalescing media shall be provided as manufactured by ACS Environmental.

2.04 Cover Gasketing

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

Section 3.0 System Components

3.01 Secondary Coalescing Media

A reticulated, polyurethane secondary coalescing media shall be included to provide increased coalescing surface area in the oil/water separator.

3.02 Effluent Pump And Control Panel

The treated wastestream is pumped out of the oil/water separator via an automatic/manual pumpout system. The pump will be a centrifugal type with TEFC motor. The pump is to be controlled via a Nema 4 control panel with HOA operation. When in the automatic mode the pump on/off function is to be effected by a dual, reed type level switch assembly located in the oil/water separator effluent chamber.

The entire pumpout system will be mounted, plumbed and wired to the VEW system skid and plumbed via ASTM, D1785, schedule 80 PVC. Power disconnect optional. Power required: 115/230V/1/3ph/60Hz.

3.03 Effluent Solids Filter

A filter housing assembly shall be provided mounted to the pump discharge piping to facilitate removal of all filterable solids down to the 10 micron (nominal) size level. Filter housing, housing cap, internal bag basket and replaceable filter bags are to be of polypropylene construction. Cap housing seal is Buna-N. A pressure gauge is provided to indicate bag changeout pressures.

3.05 System Skid

The system will be provided mounted, plumbed and wired to a forkliftable skid constructed of A-36 carbon steel. The external surfaces shall be prepared to an SSPC-SP6 finish followed by a prime coat and industrial grade epoxy coating (6 DFT min.).

3.06 Warranty

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

ACS Environmental's VEW Series Vehicle Equipment Wash water treatment systems are self-contained, packaged treatment systems designed for efficient removal of oils, fuels, hydraulic fluids, filterable solids, readily settleable solids, sheens and many other contaminants. The VEW's compact footprint and low profile design requires less space and installation labor than competitive designs.

Our designs incorporate best available, industrial grade technologies and not consumer grade "pool or spa filter systems". Due to a wide variety of applications ACS offers many system configurations to meet your requirements. We review each application and provide a solution custom tailored to meet the project requirements, customer desires and budget constraints.

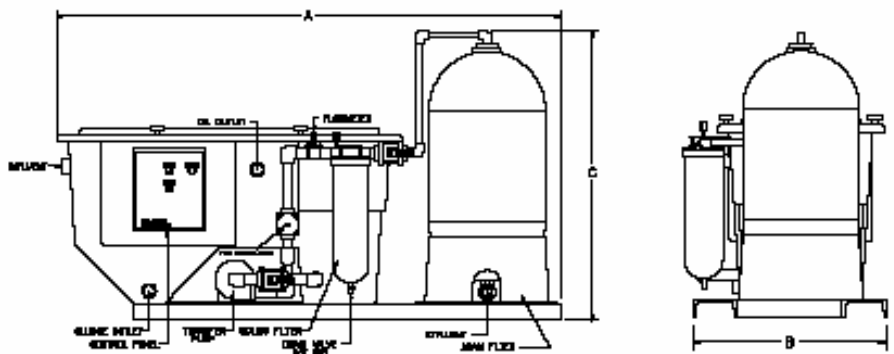
FEATURES

- OS Series oil/water separator
- Adjustable oil skimmer
- Solids filter
- Solids settling
- Effluent pumpout
- Flow meter
- Coalescing media
- Nema 4 controls
- Small footprint
- Steel system skid
- Lightweight, compact design

APPLICATIONS

- Vehicle wash rack: car/truck/aircraft/bus
- Refueling depot runoff
- Vehicle washwater treatment
- Oil spill recovery
- Bilge/ballast water treatment
- Equipment maintenance facilities

VEW Series Vehicle Wash Treatment Systems



DIMENSIONS and CAPACITIES												
Model	Dimensions (inches)			Fitting Sizes (inches)				Weight (Lbs.)		Media Ft ²	Sludge Gal.	Flow GPM
	A	B	C	INLET	OUT	OIL	SLUDGE	Empty	Operating			
VEW-2	7'	2'-0"	5'-6"	2	2	2	2	550	1425	486	6.5	5
VEW-4	7'-7"	2'-3"	6'-3"	2	2	2	2	650	2280	972	13	10
VEW-8	8'-6"	2'-6"	6'-10"	2	2	2	2	975	3600	1944	13	20
VEW-12	9'-0"	4'-0"	6'-10"	3	2	3	3	1500	5800	1866	25	30
VEW-16	9'-5"	5'-6"	6'-10"	3	2	3	3	2000	8700	2488	37	40

*Information not for construction *Design & dimensions may change without notice *Flow rates are nominal
For larger flow rates please contact Pan America Environmental. The sizes shown are the most popular flow rates.

System Sizes and Design

ACS Environmental provides a wide variety of system configurations and sizes for every type of vehicle wash facility including tank truck, car/truck, military, aircraft, railroad, mining, forklift and others. We offer a wide variety of treatment technologies and options as stand alones or in combinations to provide an industrially designed solution to your application requirements.

Description:	The VEW Series Vehicle Wash Treatment Systems are designed for above grade applications. The lightweight, compact systems are designed with many features and options to provide engineers, system integrators and end users with convenience and flexibility in system integration choices. Products removed: motor oils, fuels (vehicle/jet), fuel oils, hydraulic fluids, immiscible machining oils, lube oil, transmission fluid, LNAPLs, air compressor lube, solids, sheens and other many products. Model sizing is based on the oil/fuel specific gravity, droplet size removal desired and other parameters of the wastestream.																
Performance:	10 mg/L or less, 30 micron oil droplet size																
Flow Rates:	<table border="1"> <tr> <td></td> <td>VEW2</td> <td>VEW4</td> <td>VEW8</td> <td>VEW12</td> <td>VEW16</td> </tr> <tr> <td>GPM</td> <td>5</td> <td>10</td> <td>20</td> <td>30</td> <td>40</td> </tr> </table> <p>Flow rates are nominal.</p>						VEW2	VEW4	VEW8	VEW12	VEW16	GPM	5	10	20	30	40
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Coalescing Media																	
<i>Construction</i>	PVC																
<i>Spacing</i>	1/2 "																
Standard features:	OS Series oil/water separator, solids filter, effluent pumpout, integral oil skimmer, coalescing media, small footprint & lightweight design.																
Power:	115/230V/1/3ph/60Hz.																
Construction Materials:	Dion 6694/95 resin, FRP mat and fiber, schedule 40 PVC pipe, PVC media PVC cover gasket																
Availability:	4-8 weeks after receipt of order.																
Warranty:	1 year from date of shipment.																