



Sabian® BWS Filters

Tertiary Produced Water Oil and Solids Removal

Key Benefits

Cost Saving

- High single-vessel capacity, less piping and auxiliary equipment, and fewer controls lead to lower install costs.
- Conservative flux rate, lower backwash frequency, and reduced energy consumption and media attrition save operating costs.
- Maintenance costs are minimized because there are no failure-prone internal scrubbers, pumps or other moving parts.

Better Performance

- Negligible upstream surge capacity required because the same pump and water is used for feed and backwash, allowing you to use existing tanks with no flow diversion.
- Large horizontal configurations without the dead zones, tar balls and wormholes common with other products.

High Flexibility

- Turndown capacity to 45% of maximum flow gives you predictable results in unpredictable flow conditions.

OVERVIEW

Sabian Black Walnut Shell (BWS) filters provide a highly efficient method for removing the smallest traces of oil and solids that remain in produced water after other treatments. The system achieves a target water quality as low as <3 ppm oil in water and TSS.

Sabian BWS filters save you money in every aspect, from your initial capital investment to engineering and operational costs to maintenance. They use an advanced backwash and media cleaning process – saving equipment capital, site space, energy, water consumption, filter media and downtime.



HOW IT WORKS

As produced water flows through the filter, oil and solids are trapped in a media bed of ground black walnut shells. When the media becomes saturated, a backwash cycle is triggered by either a preset time or pressure drop. A mixture of compressed air and water is injected to fluidize, agitate and quickly clean the media inside the filter. Oil and oily solids are easily shed from the water-wet walnut shell media. The cleaned media then resettles for one minute and the filter is placed back in service.

System operation is completely hydraulic with no mechanical agitators or scrubbers. The media settles much more evenly than with other systems, thus eliminating dead zones, tar balling, and wormhole (or channeling) problems.

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Standard Features

- ASME code pressure vessel
- One charge of crushed black walnut shell media
- Dedicated solenoid box
- Structural-steel skid for vessel, and pipe work
- On-skid piping, valves and fittings
- Water-resistant control panel
- Materials of construction:
 - Filter vessel: internally coated carbon steel
 - Removable internals: 316 SS
 - Piping: internally coated carbon steel

Note: Can be customized to meet required specs.

Options Checklist

- Pump for feed and backwash
- Backwash treatment tank
- Upgraded materials for pumps, valves, instruments, piping
- Ancillary equipment such as transfer pumps and chemical injection
- Cold-weather protection such as skid enclosure and tank insulation
- Water characterization services
- Other options as required to meet your specifications

Typical Sabian Capacities and Dimensions				
Capacity (BWPD)	Turndown (BWPD)	Vessel Dimensions		
		Orientation (Hor./Ver.)	Diameter (feet)	Height (H) Length (L) (feet)
6,544	2,726	vertical	4.5	6 H
11,633	4,847	vertical	6	6 H
20,681	8,617	vertical	8	6 H
26,174	10,906	vertical	9	6 H
39,099	16,291	vertical	11	6 H
50,490	21,037	vertical	12.5	6 H
75,000	34,091	horizontal	9.2	31 L
100,000	45,455	horizontal	9.2	42 L
125,000	56,818	horizontal	9.2	53 L

Contact Exterran to confirm sizing.



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