Envirogen Biotrickling Filters are vertically-oriented vapor-phase bioreactors filled with an inorganic media featuring 100% recirculation. The filters’ unique design can address high concentration of H2S odors in areas where space is at a premium – offering a shorter retention time and treatment of higher air volumes than conventional biofilters. They can also treat high concentrations of VOCs and ammonia, and be chemically augmented when needed.

The biotrickling filter towers are available in a dual media chamber version (Tall), and a single media chamber version (Low Profile). They are delivered with lightweight, synthetic media with internal irrigation assemblies preinstalled to improve the speed and lower the cost of installation.

Envirogen Biotrickling Filter systems are a very robust, sustainable solution, offering:
- Small physical footprint
- Efficient contaminant destruction
- Eliminate chemical usage/storage of chemical scrubbers
- Reduced energy usage
- Lower carbon footprint than traditional technologies
- Lower overall emissions
- Adaptation to changing odor sources and levels

### Exacting Process Control
Envirogen Biotrickling Filter Systems feature the latest concepts in odor and VOC control system design. Unlike other biofilter tower systems, the recirculation water maintained in the tower allows for optimal control of pH, nutrient levels and biofilm thickness. These highly automated systems use minimal energy; require minimal staff attention and little or no chemicals, cutting operating costs and eliminating the need for chemical storage and handling.

<table>
<thead>
<tr>
<th>Line</th>
<th>Models</th>
<th>Media (ft³)</th>
<th>CFM</th>
<th>EBRT/seconds (default)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biotower (BT)</td>
<td>30</td>
<td>120-3500</td>
<td>480-14000</td>
<td>10-30 (15)</td>
</tr>
</tbody>
</table>

Features include:
- FRP vessel without metal support structure (no corrosion)
- Single or dual-zone media tailored to air influent
- Ease of Installation (modular)
- “Drop and Start-up” (i.e., drop unit on pad, pre-loaded media)
- High degree of automation & process control in FRP or stainless steel panel construction

A Lifecycle Performance Company
About Envirogen Technologies
Envirogen Technologies is an environmental technology and process solutions provider that combines experience in water and vapor phase treatment with process development expertise, delivering long-term, guaranteed solutions in a broad range of treatment and process-related applications. Today, we provide system design, process engineering, equipment and operating solutions for the treatment of process water, groundwater, wastewater, VOCs & odor as well as materials recovery for a range of industrial and non-industrial customers throughout North America.

The Envirogen Technology Portfolio

<table>
<thead>
<tr>
<th>Bioreactors</th>
<th>Biofilters</th>
<th>Ion Exchange</th>
<th>Physical-Chemical</th>
<th>Adsorptive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluidized Bed Reactors (FBR)</td>
<td>Built-in-Place (high flow)</td>
<td>SimPACK™ (400 gpm +)</td>
<td>FlexSorb™ (5-150 gpm)</td>
<td>EnviroHPA™ Media</td>
</tr>
<tr>
<td>Membrane Bioreactors (MBR)</td>
<td>I-Series (mid-flow)</td>
<td>MinX™ (100-850 gpm)</td>
<td>HyperSorb™ (35-3000 + gpm)</td>
<td></td>
</tr>
<tr>
<td>Suspended Carrier Reactors (SCR)</td>
<td>H-Series (low-flow)</td>
<td>MinFlex™ (&lt;300 gpm)</td>
<td>Reverse Osmosis</td>
<td></td>
</tr>
<tr>
<td>Biotrickling filters</td>
<td>Service Exchange / Customer Supplied</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Envirogen Biofilter Media
ScorFil™
inorganic, scoria lava

VamFil™
aged bark, engineered

FlexFil™
synthetic structural or random packed media

Up to 10-year warranty

Visit our website www.envirogen.com for more information about the Envirogen Biotrickling Filters and our regional locations.

The information in this brochure may be subject to change without notice and is provided for general guidance only. The dimensions and performance of systems, products and services may vary. Pictures are for example purposes and not always to scale. All legal obligations are exclusively as set out in contractual documents. Nothing contained herein constitutes a representation, warranty or undertaking.

©2014 Envirogen Technologies, Inc. All rights reserved.
ETI 2002 052014