

# ecofilter

### Sustainable. Easy to Operate. Simply Odorless.



bioairsolutions.com

## Say "Hello" to EcoFilter®

A scalable biological odor control solution for every odor source, EcoFilter utilizes BioAir's breakthrough EcoBase® structured, synthetic biotrickling media to deliver unmatched odor and air emission control performance. EcoFilter systems provide consistent, proven, long-term removal of both inorganic and organic odors thanks to the unique structured characteristics of BioAir's proprietary EcoBase media. EcoBase media delivers uniform performance across the media bed and throughout the life of the system, all without hazardous, expensive chemicals or carbon. EcoFilter is the ideal environmentally-friendly, sustainable solution to the odor and air emission control needs of municipalities and industry.

#### **EcoFilter Features**

- EcoBase<sup>®</sup> Media Engineered for optimal mass transfer and high odor loadings
- Total odor control (>99.9% H<sub>2</sub>S and >95% odor removal)
- From 200 CFM to 200,000+ CFM, EcoFilter systems are scalable to fit your needs
- Removal of organic and inorganic odors
- Small Footprint: EcoBase<sup>®</sup> media allows for optimal odor control in 1/3 the space
- No hazardous, expensive chemicals
- Extremely low operation and maintenance costs
- No recirculation, no backup carbon and no chemical scrubbers
- No pH meters
- Easy controls and minimal instrumentation

#### **EcoBase® Advantages:**

Every EcoFilter unit includes BioAir's proprietary EcoBase® structured, synthetic media. EcoBase has measurable, uniform characteristics that provide a uniform surface area, uniform flow distribution and uniform biomass contact time, leading to consistent, reliable performance.

- Higher specific surface area means higher microbial density, which in turn leads to higher odor treatment capacity
- Uniform engineered flow channels provide uniform airflow throughout the media, with no channeling or media bypass
- Stable performance is possible at very high H<sub>2</sub>S mass loadings and very low residence times



#### **Why Fresh Water Matters**

BioAir's EcoFilter<sup>®</sup> products use fresh water for the removal of organic odors which cannot be treated using acidic recycled water. Although H<sub>2</sub>S is often the primary odorous compound, all airstreams contain some organic reduced sulfur compounds, such as methyl mercaptan, dimethyl sulfide and many other volatile organic compounds that contribute to odors. Systems that recirculate acidic drain water are scientifically unable to maintain the proper bacteria for the removal of organic odors. It has been demonstrated that EcoFilter is capable of facilitating the growth of both autotrophic and heterotrophic bacteria in a single reactor vessel, thus allowing the oxidation and removal of both organic and inorganic odors in a single reactor without the need for secondary polishing in a carbon or chemical scrubber.



#### **CASE STUDY**

#### JEA Buckman Facility Jacksonville, FL

- Equipment: EcoFilter<sup>®</sup> EF1242
- Odor Source: WWTP Biosolids Disposal Building
- Empty Bed Residence Time (EBRT): 6.6 seconds
- Airflow: 15,500 cfm (26,350 m3/hr)
- Actual Inlet H<sub>2</sub>S Treated: 100-225 ppmv
- Actual H<sub>2</sub>S Removal Efficiency: 99.8% @ 3.3 seconds<sup>2</sup>

An EcoFilter EF1242 was installed at the JEA Buckman facility in Jacksonville, FL in 2011.

The EcoFilter system treats a high-concentration  $H_2S$  airstream in an industry-leading EBRT of only 6.6 seconds, exceeding the 99.0% performance requirement in just the lower half of the reactor. The graph below shows the performance of the system in a typical week. The blue line indicates 99.8% average  $H_2S$  removal at the midpoint of the reactor, 3.3 seconds after the air enters the vessel. The green line indicates removal exceeding 99.99% at the reactor outlet.

Results: Performance of the EcoFilter far surpasses the customer's requirements, providing a significant margin of safety. The cost of ownership is far less than competing technologies, and with none of the chemical costs or risks inherent to chemical scrubbers Happier neighbors. Happier operators. Zero odors.





















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