

## ENVIRONMENT

**TITLE:** DESIGN SPECIFICATION FOR A VERTICAL BED BIOFILTER - NPB #04-039

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**ABSTRACT:** Biofilters have been demonstrated to be an effective technology in reducing odor and gas emissions from these facilities. Large horizontal biofilter media beds sometimes prevent application of this technology to building layouts. A vertical biofilter bed may be an effective alternative. The objective of this research was to determine optimum vertical bed biofilter construction configuration to achieve uniform airflow that would compensate for media settling. Media thickness was determined to be a factor in achieving uniform airflow. For biofilters of 12 inches and 24 inches thick, a 9.6 degree wall construction produced the least airflow variation at the end of one year as compared to a wall slope of 0 degrees and 4.8 degrees. Improved media moisture distribution was achieved when the water soaker hose was placed on top of the media versus being suspended vertically through the media. The value of this research leads to a more efficient vertical biofilter design configuration.

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