



## Reducing Odors And Carbon Bed Fires At Waste Treatment Facilities

To reduce the risk of bed fires waste treatment facilities are changing from chemically impregnated carbon to catalytic adsorptive carbon to control hydrogen sulfide odors. Caustic bed fires may occur when caustic chemicals are used to reactivate the impregnated carbon beds, rapid oxidation can occur causing intense carbon bed fires.

Many times after a waste treatment facility has experienced a carbon bed fire, they seek either a different type of carbon media bed or often looking at newer advanced technologies. Typically, resolve comes from fire insurance liabilities, premium increases or hazardous employee exposure.

With the Filtercrobe I<sup>®</sup> bio-filtration systems, use of catalytic carbon coupled with specially designed proprietary microbes, offers a unique system of continuous carbon bed rejuvenation providing one of the most effective means of waste process odor treatment eliminating any exposure to possible carbon bed fires.

In the constant rejuvenating procedure, the catalytic carbon is contained within a stainless steel rotating drum divided into segments. This assures that one of the segments is in the rejuvenation cycle located at the bottom of the external cylinder. It is in this position that the carbon bed is exposed to the microbes as the drum revolves three times every hour. This process flushes the collected emissions from the carbon bed into the microbial solution. The carbon always remains moist and doesn't require an external sprayer system, brush downs, flushing or post treatment of high PH water. Often with other types of carbon bed systems the typical flushing periods may take over two days and require the use of a secondary carbon bed. Using the Filtercrobe I<sup>®</sup> system the cycle remains continuous without any interruption.

The typical lifecycle of standard catalytic beds is two years. With the Filtercrobe I<sup>®</sup> system the life cycle will continue up to 20 years with ever changing out the carbon media. Constant rejuvenation or cleaning of the of carbon beds and added microbial action maintains the carbon beds for years.

Switching from chemically impregnated carbon to catalytic carbon with further microbial destruction makes sense after comparing the maintenance, threat of carbon beds fires and constant long term caustic cleaning of the carbon bed, exposing employees to harmful chemicals and extended down times.

Restoring most carbon beds will require the use of sodium or potassium hydroxide; these chemicals remove the sulfur and are required to rejuvenate the carbon bed. However, workers must be careful when applying these chemicals due to the elevated temperatures. Should minimal air be present to remove or cool the elevated oxidation temperatures, local hot spots in the carbon bed can occur and may result in a localized bed fire which is extremely difficult to extinguish. These carbon bed fires can reach temperatures high enough to cause permanent damage to filtration equipment.

Catalytic carbon has the very high ability to remove odors and volatile organic compounds. The catalyst promotes the introduction of oxygen into the hydrogen sulfide stream. This introduction accelerates the promotion from H<sub>2</sub>S to SO<sub>4</sub> and elemental sulfur. With the use of the Filtercrobe I<sup>®</sup>, catalytic absorptive maximum capacity will never be reached. This is due to the continued rejuvenation cycle. The microbes continue to process the emissions without any form of cleaning, shut downs, chemical, purging, drying or washing. The catalytic carbon bed never inhibits the adsorption sites and never requires any thermal treatment.

For more information about Filtercrobe I<sup>®</sup> bio-filtration systems, please visit our website: [www.american-environmental.us](http://www.american-environmental.us) or call and speak with a representative. +1 918 708-1253.