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Makers of OilSorb™ and Other State-of-the-Art Filtration Media

### Technical Advisory #29

#### **Recontamination of water with activated carbon; OILSORB to the rescue.**

George Alther, Dr. Henry Novicki, Wayne Schuliger.

When granular activated carbon is used to remove BTEX from water, a detrimental phenomenon can occur. The molecules with lower solubility, such as toluene and xylene, can kick off benzene, which has a higher solubility. The amount of benzene is now higher in the effluent than in the influent, causing the water to become hazardous again. This phenomenon is called “Roll-Off or Roll-Over.

##### Definition:

Roll-off or Roll-over is defined as the elution of adsorbate exhibiting concentrations greater than the influent, caused by desorption of fast-moving bands by components in the slow moving bands.

The desorption is due to differences in the adsorbate capacities on the carbon in the slower and faster moving adsorption bands.

##### Roll-Over of Fast-Moving Bands, Description:

The extent of Roll-Over (Roll-Off) is determined from the multi-component adsorption isotherms.

Every component of the influent mixture will experience Roll-Over, except the most slowly moving component.

The fastest moving band will experience Roll-Off from every other component band in the column.

