



POLLUTION ENGINEERING - CASEBOOK

by Ann Hasbach, Contributing Editor

Pump Station Puts New Activated Carbon to the Test

ECO Resources, a division of Southwest Water Co. in Sugarland, Texas, had been using sodium hydroxide- and potassium hydroxide-impregnated carbons to contain sewage odors at its remote, residential pumping site. But when neighbors' complaints regarding odors began to increase, and traditional methods of treatment proved ineffective, ECO began to look for options. They agreed to field test Centaur, a new activated carbon from Calgon Carbon Corp., Pittsburgh, Pa.

All activated carbons exhibit some degree of catalytic activity, but traditionally they had to be chemically impregnated to accelerate the rate of chemical reactions in a predictable manner. With Centaur activated carbon the surface structure is altered to enhance its catalytic properties.

Before Centaur's availability, ECO had installed two 28-inch high flow VentSorb units with sample ports to track H₂S breakthrough. Initially, the units were intended to provide side-by-side comparisons of a sodium hydroxide-impregnated carbon and a potassium hydroxide-impregnated product. While both carbons demonstrated the ability to screen H₂S, odor from organics persisted.

"The people living nearby don't care whether the odor is H₂ S or organic," says Paul Winebrenner, chief plant operator for ECO, "they just don't want to smell it. We found that while impregnated carbons did remove some H₂S, they didn't solve the problem completely and they didn't address organics at all."

"We tried deodorant blocks, but that only resulted in replacing one kind of odor with another, equally objectionable one," Winebrenner explains. "Using chemically impregnated carbons, I received odor complaints from residents at least every other month."

ECO changed over to Centaur activated carbon in the summer of 1993. "Since Centaur has been on-line, I have not received a single complaint," Winebrenner claims.





Centaur carbon exhibit consistent catalytic activity, beyond that of traditional carbons, without being chemically impregnated.

The key to Centaur's effectiveness lies in its ability to remove both H_2S and organics. Because it has no chemical impregnants, Centaur removes organic compounds.

Although Centaur achieves 10 percent to 16 percent weight loading (as compared with 20 percent to 24 percent typical of chemically-impregnated carbons), it can be water washed on site, significantly extending the bed life.

As a passive odor control system, Centaur does not require the manpower involved in daily monitoring of chemical feed technologies. Centaur handles H_2S concentration spikes without adjustment, important for remote pump stations.

And, unlike impregnated carbon, which must be disposed of in a landfill, spent Centaur carbons can be returned to Calgon Carbon for reactivation.

"Centaur is more economical because it exhibits a much longer life," Winebrenner concludes. ECO has been so impressed with Centaur that the company is installing a full-scale system as part of the district's wastewater treatment plant.

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