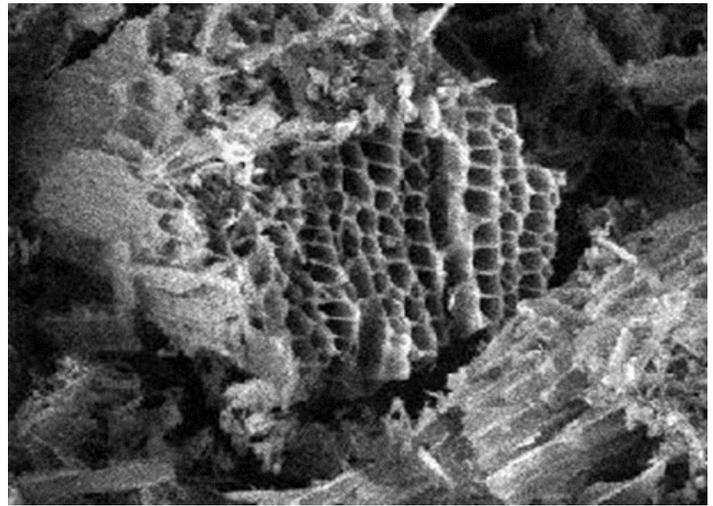




Local/State Partnership Addresses Groundwater Contamination in Scott City

During the week of February 19, 2018, two granular activated carbon (GAC) treatment systems were removed from service in Scott City. The GAC treatment systems, originally installed in 2000 and 2001, were designed to remove petroleum contaminants from Scott City public water supply wells PWS-1, PWS-5 and PWS-10. The petroleum contaminants originated from former gasoline stations near the public water supply wells in Scott City. The GAC treatment systems being removed have treated approximately 4 billion gallons of water during its service life.

Granular activated carbon is commonly used to remove organic compounds, such as petroleum contaminants, from water. Granular activated carbon is contained in large steel vessels that distribute the contaminated groundwater across the top of the vessels and allow the water to move slowly down through the activated carbon. Granular activated carbon is appealing for water purification because of its substantial surface area. A single pound of activated carbon has greater than 35 acres of surface area, the approximate surface area of 100 football fields. This large surface area per pound allows



Microscopic photo of a granular activated carbon particle.

GAC to “grab” petroleum contaminants and hold the contaminants in their internal pore structure (see photo).

Due to increasing levels of nitrates and petroleum contaminants in PWS-1, KDHE, Scott City and the engineering firm, Miller and Associates, worked together to design and install piping to re-route the contaminated groundwater from all three public water supply wells to a new GAC system (see photo). This new treatment configuration allowed the city to blend PWS-1 with water from PWS-5 and PWS-10 to decrease the nitrate levels. The process also aided in reducing the concentration of MtBE, a petroleum contaminant commonly found in gasoline. By reducing the MtBE concentration, the GAC treatment system became more efficient and the carbon usage rate was reduced. This change allowed both the KDHE and Scott City to save money on treatment.

Benefits

- Three of Scott City’s public water supply wells are now treated with GAC.
- Both petroleum and nitrate levels are reduced to meet federal drinking water standards.
- The new system is more cost-effective to operate.



New GAC Treatment System in Scott City.