

EPA uses EVAC Filtration System to Filter Sheen and Contaminants from Frac Tank Water

Twin City, GA – September 2010

A fuel line between an underground storage tank and a gasoline pump was discharging gasoline into Thick Creek, which is a tributary of the Canoochee River. It was discovered on September 7, 2010, and the tank was immediately emptied, but gasoline continued to flow to the surface via a ground water seep.

On September 11, 2010, the EPA On Scene Coordinator remained to oversee drainage of the frac tank, which was used to store liquids that had been removed from the sump/intercept-trench. A local oil company provided a fuel truck and pump to remove oily wastes from the surface of stratified liquids. The water was drained from an outlet at the bottom of the frac tank; the drain was connected to a hose which was strung approximately 30 feet into a drainage ditch. At the end of a hose was a C.I.Agent® EVAC Filtration System (a filter to adsorb hydrocarbons and remove sediment). The EVAC Filtration System was monitored for breakthrough using a combination of C.I.Agent® Hydrocarbon Detection Strips and vapor monitoring with a TVA-1000 PID/FID. Filtered water traveled approximately 350 feet along the drainage path to a retention pond approximately a half acre in size. Throughout the filtration process, no sheen was observed immediately near the filter, within the drainage ditch, or on the retention pond. Approximately 9,000 gallons of water was filtered through the first EVAC filter at a rate of approximately 70 gpm. Then 5,500 gallons of water was filtered through the second EVAC filter at a rate of approximated 30 gpm for a total of approximately 14,500 gallons of contaminated water. The flow was stopped when the bottom of the oil level approached the top of the tank outlet. The local oil company removed the remaining fluids from the tank and transferred them to an oil/water tank used for recycling.

Photos courtesy of EPA



Frac tank containing contaminated water.



C.I.Agent® EVAC Filter is attached to a hose from the frac tank. The water is filtered to a non-detect level for hydrocarbons.



A C.I.Agent® Hydrocarbon Detection Strip is used to monitor the filtered water leaving the EVAC Filter.

C.I.Agent® Costs Comparison

The removal of 14,500 gallons of contaminated water

	C.I.Agent® EVAC Filtration System	Vacuum Truck
Equipment:	2 EVAC Filtration Systems	Vacuum truck and personnel
Costs:	2 EVACs at \$356 each to filter contaminated water ($\$356 \times 2 = \mathbf{\$712}$)	Removal and disposal of contaminated water at approximately 70¢ per gallon (14,500 gallons \times .70 = \$10,150)

Benefit Summary: Sheen and light contaminants in water are an ongoing occurrence. The C.I.Agent® EVAC Filtration System can save thousands of dollars in clean up costs when removing sheen from contaminated water. As demonstrated here, there is a vast difference in paying for two EVAC Systems vs. paying a company to haul away oil contaminated water . . . and the C.I.Agent® EVAC Filtration System is reusable.