

## **THE EFFECT OF CARBON CONTAMINANTS ON STEAM REGENERATION OF A VAPOR PHASE CARBON ADSORPTION SYSTEM**

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A soil vapor extraction system was installed to remediate the South Tacoma Well 12A Superfund Site by removing chlorinated solvents and fuel hydrocarbons from the vadose zone. The basic system consisted of twenty-two extraction wells, three centrifugal blowers, and three carbon adsorbers. The carbon was regenerated on site by steam stripping. The mixture of steam and stripped organics was condensed and then decanted to separate the water phase from the organic phase. The recovered water was air stripped to remove dissolved organics prior to discharge to the city sewer. The recovered organic liquids were shipped off site to a permitted facility for thermal destruction.

It was necessary to change the carbon in the adsorbers after two years of operation due to an accumulation of contaminants in the carbon beds. Samples were taken from these beds for analysis in order to identify what chemicals were remaining in the carbon after desorption with steam. This report describes the results of these analyses. The data indicated that both 1,1,2,2-tetrachloroethane and fuel hydrocarbons in the C-9 to C-24 range remained in the carbon beds after steam regeneration in sufficient quantities to require replacing the carbon.

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