

## History

The Charlie Burch site industrial history dates back to the 1950s. In the 1960s an independent hauler used the site to bury wastes collected from several manufacturers. The site was closed according to regulations in 1983. In 1996 after several years of study, Rohm and Haas enrolled the site in the Texas Voluntary Cleanup Program. Since then the Company has worked closely with the State to move toward final groundwater cleanup.

## What's the problem?

Investigations have revealed groundwater moving southeast from the site (Figure 1) contained a compound called 1,2-dichloroethane (DCA). DCA is found in a narrow band between approximately 25 feet and 65 feet beneath the surface (Figure 2).

DCA does not pose any risk to people in the area. Extensive testing shows that there is no DCA, either at the surface or within about 25 feet of the surface. Water is either provided by public utilities from outside the area or extensively tested, or it comes from wells several hundred feet deeper than where the DCA is located.

Thus far, Rohm and Haas has built two treatment plants to remove the DCA from the groundwater. One is located at the former disposal area and the other is located on a 13-Acre Tract south of Forestburg Drive. Since the start-up of the first system in 2001, the systems have removed and cleaned over 170 million gallons of water.

## What's been done?

In 1999, approximately 91,000 cubic yards of material were excavated from the site and hauled

away to licensed secure disposal sites. The excavated area was backfilled with clean clay-rich fill, graded, and capped with low permeability soils. This, combined with the active pump and treat (P&T) systems, has reduced the levels of DCA in groundwater.

## What's next?

A process called enhanced anaerobic bioremediation (EAB) has been tested and approved for use at the Burch site by the Texas Commission on Environmental Quality (TCEQ). The process speeds the reduction of remaining DCA in groundwater using Bioremediation. This is a natural process in which naturally occurring micro-organisms (e.g., fungi, bacteria, and other microbes) decompose (metabolize) organic contaminants found in groundwater, converting them to harmless end-products. The plan is to start this work in 2011, with occasional periods of brief field work for several years after.

EAB at the Charlie Burch site will require the injection of harmless organic materials, including vegetable and soybean oils into the underlying groundwater. The vegetable and soybean oil provides a long-term source of food that helps to build the microbial population to effectively decompose the contaminants (Figure 2).

The oils are injected through shallow wells in several areas directly into the groundwater that contains the DCA. Groundwater flows through the treatment zone, and the materials and microorganisms break them down, converting them to harmless end-products. In several years the treatment zone materials dissipate and clean groundwater flows through the area. Several treatments may be necessary to replenish the treatment materials before the process is complete.

## Additional Information

More information on the Charlie Burch site can be obtained online at <http://www.charlieburchproject.com/>.

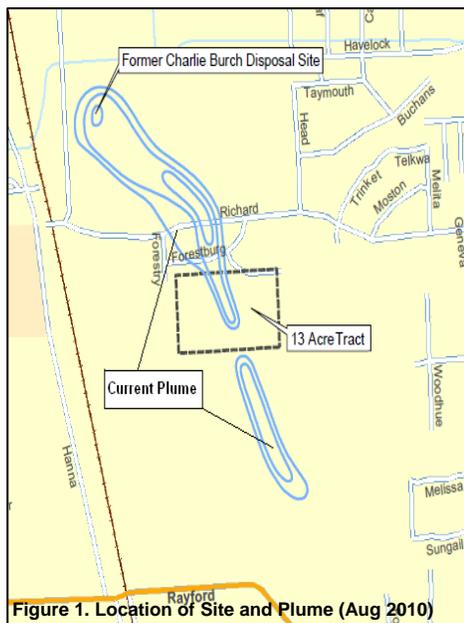


Figure 1. Location of Site and Plume (Aug 2010)

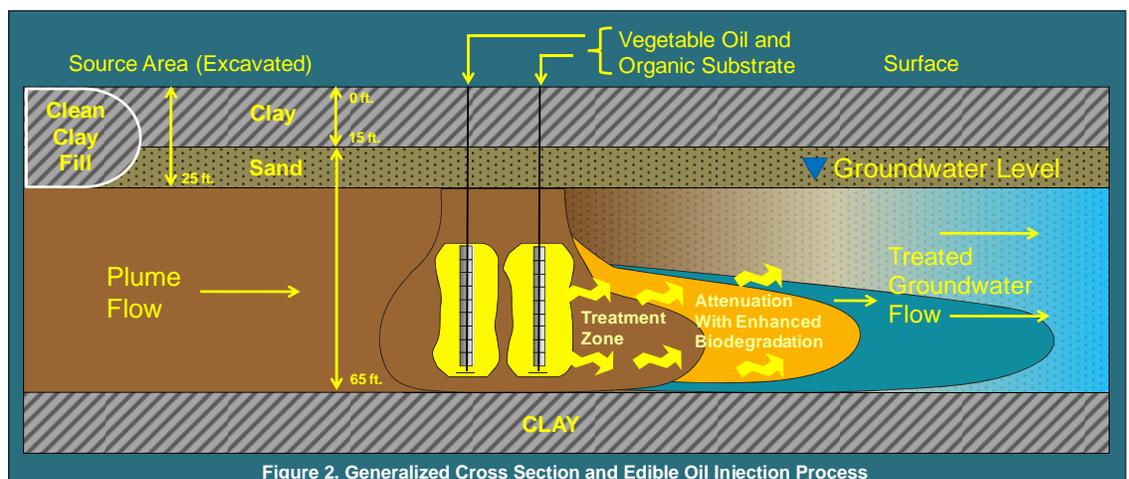


Figure 2. Generalized Cross Section and Edible Oil Injection Process