

# Project Profile

Site Remediation



SR

|                            |                                     |
|----------------------------|-------------------------------------|
| <b>Location</b>            | Former site of Kelly Air Force Base |
| <b>Contract Amount</b>     | Confidential                        |
| <b>Date of Performance</b> | Early 2009                          |

**Description:** This project involved the remediation of source contamination through the “Installation Restoration Program” at a former Air Force base. The primary scope entailed the removal of Tetrachloroethylene and Trichloroethylene contamination from the soil and groundwater.

The site covers approximately two acres with contamination ranging in depth from the surface to 45-foot deep and was delineated using a simple grid pattern to determine the extent of contamination.

Because of the depth and extent of the contamination, space limitations prevented sloping and benching techniques in the remedial plan, forcing an alternate method for shoring. A shotcrete shoring system was determined to be ideal in this scenario because of the speed of installation and its cost effectiveness. With the excavation phase underway, the shotcrete system was installed. Careful execution and coordination with the shoring contractor was required.

The delineated areas determined to be clean were excavated and stockpiled onsite, while contaminated soil was transported to the appropriate hazardous or non-hazardous landfill. To treat the solvent contaminated groundwater, a process known as reductive dechlorination is being used whereby a permeable reactive barrier consisting of soybean oil, tree mulch, ferrous sulfate, cotton seed mulch, pea gravel and sand was strategically placed into various 30' X 30' cells where groundwater was present. The barrier acts to create a medium where by the bioremedial activity of slowly removing chloride atoms in the contaminants occurs, eventually breaking down the Tetrachloroethylene and Trichloroethylene into ethylene gas, a harmless end product. Following installation of the cells, a system of well pipes was placed horizontally over them with vertical risers to the ground surface. The piping system allows for the injection of additional soybean oil to recharge the system and prolong the service life of the treatment system. These cells will provide a passive treatment of the groundwater as it passes through the cells.

At press time, the project was nearly concluded with 41,000 cubic yards of contaminated soil removed and the groundwater treatment system in place and projected to be operational for the next 30 years.

## Project Highlights

- Because of the depth and extent of the contamination, space limitations prevented sloping and benching techniques in the remedial plan, causing SWS Environmental Services to think quick and use an alternate method for shoring
- The project was concluded with 41,000 cubic yards of contaminated soil removed and the groundwater treatment system in place and projected to be operational for the next 30 years