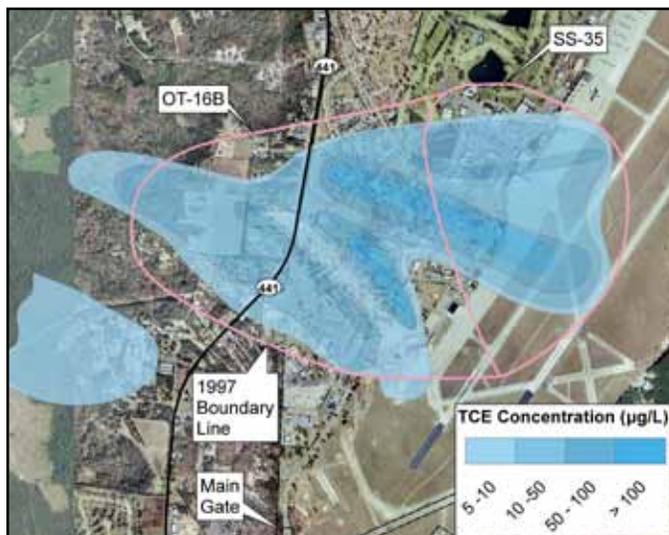




SITE OT-16B

Shaw Air Force Base, S.C.



Map depicting the TCE plume at site OT-16B at Shaw A.F.B., S.C. The red line indicates the boundaries of the plume in 1997, prior to the installation of the pump-and-treat system at the site. Today, the plume is significantly smaller due to aggressive cleanup of the site.

One of the four, off-base, active cleanup sites here, OT-16B/SS-35, is on the west side of the base. Air Force technicians discovered this site in 1989. It has two, co-mingled plumes that contain trichloroethylene and tetrachloroethylene in the Duplin and Black Creek Aquifers. West leading of plumes are in the deep Black Creek Aquifers, 150-300 feet below ground surface. These plumes affect 78 off-base land owners, the most of any site here.

WHAT ARE THEY?

Trichloroethylene is a colorless or bluish liquid most commonly used to remove grease from metal parts and to clean textiles. Tetrachloroethylene is a manufactured chemical used for dry cleaning that is commonly known as “dry cleaning fluid,” although it can also be used for metal degreasing.

Contamination at the site likely originated from trichloroethylene use on Shaw’s airfield, and tetrachloroethylene from an on-base dry cleaner between the 1950s and the 1970s. The compounds moved through soil and into the groundwater. Originally, the releases caused two separate plumes (identified as OT-16B and SS-35), but through the decades, apparently the two plumes merged.

BACKGROUND

Military bases are large, complex places that must use and dispose of hazardous materials to do their missions. At Shaw, liquids such as jet and other fuels, and other petroleum products including paints, thinners, adhesives, cleaners, pesticides, hydraulic fluids and solvents are necessary for the use and care of aircraft and vehicles. Many thousands of people live and work on the base.

Before the 1970s, which was when the government began to realize the importance of regulating environmental practices, hazardous wastes were handled or discarded in numerous ways: some were stored in drums or in underground storage tanks; some were reused, recycled, or discarded of in approved off-base sites; some were buried in on-base landfills; and many were burned in fire training exercises on base.

These were acceptable at the time, but are now known to cause environmental contamination and are no longer done. At Shaw, old methods resulted in some soil and groundwater contamination on and around the base.

Today, your Air Force carefully follows established hazardous waste management practices and regulations that protect the health and environment. The Air Force is committed to cleaning up the soil and groundwater contaminated from its past activities, in close partnership with the South Carolina Department of Health and Environmental Control.

The plume originates on base but extends significantly outside the base boundary into a neighboring multi-use zoned area that includes businesses, residential neighborhoods and farm land.

In 1989, the Environmental Protection Agency set limits for the amount of both compounds allowed to be safely released in the air, ground, and water. The maximum, tolerable contamination level for both is five parts per billion, which is like 1 tablespoon (about 250 drops) of water in an Olympic-size swimming pool.

CLEANUP

In 1998, the Air Force began operating pump-and-treat technology with an “air stripper” to clean trichloroethylene and tetrachloroethylene from groundwater at the site. Additional monitoring wells were installed in 2008 and 2009 to better delineate the extent of the plume and the area around impacted private water wells. As part of this effort, the Air Force reactivated two off-base extraction wells in order to improve contaminant capture in the pump-and-treat system.

Also, the Air Force has installed similar equipment on a base drinking water well over the plume to ensure a safe drinking water supply for base workers and residents. Most private citizens living over the plume off base receive clean water from High Hills Rural Water Company. The South Carolina Department of Health and Environmental Control provides regulatory oversight to ensure clean drinking water for public health.

In addition to the pump-and-treat system, the cleanup plan for this site includes:

- Continue to install testing wells to identify the size of the plume;
- Optimize and expand the pump-and-treat system;
- ISCO installation to treat shallow areas;

- Continue long-term monitoring (annual sampling);
- Bilateral agreements (deed notifications) for 78 land owners;
- Review property transactions;
- Request well-drilling companies report any new wells that might be in the plume;
- Review private well program notices of intent;
- Survey annually private wells within 1,000 feet of the plume to see if any penetrate it;
- Annual notice to landowners/residents of the status of the plume;
- Conduct semi-annual public meetings of a Restoration Advisory Board;
- Notify landowners regarding any significant cleanup activities;
- Report progress of activities.

These cleanup efforts require the cooperation and effort of many organizations and people. All are working together to protect both human health and the environment.

SITE OT-16B AT A GLANCE:

- Discovered: 1989
- Contaminants: Trichloroethylene and tetrachloroethylene
- Possible sources: Aircraft maintenance and on-base dry cleaner
- Location: Plumes comingled in the Duplin and Upper Black Creek aquifers
- Cleanup remedy: Pump-and-treat system; air "stripper" on on-base well; filters provided to off-base, private well users
- Status: Underway since 1998



Pump and treat system, located on SC Rt. 441.

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U.S. Environmental Protection Agency: www.epa.gov
 South Carolina Department of Health & Environmental Control: www.scdhec.gov

