

Southern Solvents, Inc.
4009 West Linebaugh Avenue
Tampa, Florida
County: Hillsborough
District: Southwest
Site Lead: EPA
Placed on National Priorities List: July 27, 2000
ERIC ID # 3912

Site Description and History

The Southern Solvents site is a 100 ft by 185 ft parcel located on West Linebaugh Avenue in Tampa, approximately 500 feet west of the intersection of Gunn Highway and West Linebaugh Avenue in Township 28S, Range 18E, Section 16 at 28° 02' 25.8944" N, 82° 30' 35.7960" W. A fabricated steel building, asphalt, and concrete paved areas are the only structures remaining on this industrial site. The site is enclosed by a fence.

The former facility distributed dry cleaning solvents to the local drycleaning industry from approximately 1977 to 1985. Chemicals stored on the site included: tetrachloroethene (PCE) and trichloroethene (TCE). PCE was stored in aboveground tanks located on the concrete paved area and in small delivery tank trucks parked on site. Previous spills and leaks from the tanks and trucks contaminated the soil and groundwater on and around the site.

Threat

Contaminants from the site have resulted in groundwater contamination in both the surficial and Floridan aquifers. Groundwater contamination led the Florida Department of Health and Rehabilitative Services (HRS) to close several contaminated private drinking water wells in 1988, when HRS discovered that the onsite well and several neighboring deep wells were contaminated with PCE and other chlorinated solvents at concentrations exceeding Florida's PCE Drinking Water Standard of 3 µg/L. The presence of sinkholes in the area and the documented existence of elevated levels of PCE in the Floridan aquifer indicate that the Floridan, the primary source of drinking water in the area, is significantly threatened by the site contamination. The Hillsborough County Health Department continues to routinely monitor drinking water wells near the site.

Response Strategy and Status (December 2020)

In 1989, the Florida Department of Environmental Regulation (FDER, now DEP) Southwest District entered into a Consent Order (No. 89-0048) with Southern Solvents, Inc. Facility representatives completed a Contamination Assessment Report (CAR) in February 1991. Further assessments were completed and reported in July 1992 and November 1993. A second CAR, addressing the contamination of the deeper (Floridan) aquifer, was completed in 1994.

Based on the results of the 1994 CAR, the US Environmental Protection Agency (EPA) became involved in the site. EPA completed a preliminary assessment of the site in September 1996. Because of that assessment, EPA believed that the site would qualify for the National Priorities List (NPL) under the Comprehensive Environmental Response, Compensation and Liability Act

(CERCLA). EPA initiated a Remedial Investigation and Feasibility Study (RI/FS) of the site in September 1997. The Southern Solvents Site was placed on the NPL on July 27, 2000.

EPA has divided the site work into two components or Operable Units (OUs). OU 1 is for the soils and surficial aquifer. OU 2 addresses the Floridan aquifer. The RI/FS for the soil and shallow aquifer contamination was completed in June 1999. The results confirmed that soils underneath and adjacent to the building contained significant levels of chlorinated solvent contamination in concentrations that are acting as a source of groundwater contamination. A Dense Non-Aqueous Phase Liquid (DNAPL) comprised of high concentrations of chlorinated solvents is present below the water table, primarily onsite and in the proximity of the building. The DNAPL is also acting as a continuous source of groundwater contamination. The surficial aquifer contamination extends southwest off site several hundred feet past Linebaugh Avenue. There appears to be a relict sinkhole in the down gradient area of the surficial aquifer contamination that is likely acting as a conduit for contaminant migration into the Floridan aquifer.

In September 1999, EPA issued an OU 1 Record of Decision (ROD) that addresses the soils and surficial aquifer contamination. The selected OU 1 remedy included excavation of contaminated soils located above the water table around the existing building and below the building's concrete slab. In situ chemical oxidation is being used to treat the concentrated DNAPL below the water table and groundwater in the shallow surficial aquifer. EPA will select a remedy to address the underlying Floridan aquifer contamination after the OU 2 RI/FS is completed.

In September of 2002, EPA issued an Explanation of Significant Differences (ESD) with DEP concurrence that modified the soil remedy to reflect soil vapor extraction (SVE) in lieu of soil excavation after additional sampling during the initial design indicated a larger volume of soil contamination than previously identified, including inaccessible soil contamination beneath the facility building. The ESD also clarified that a chemical oxidation pilot study would be conducted prior to full-scale implementation to confirm the effectiveness of the technology in remediating contaminated surficial aquifer groundwater, including possible DNAPL, at the site.

Site cleanup is federally funded with a State cost share required. DEP signed a State Superfund Contract (SSC) in September 2002 that commits the State to a 10 percent cost share of the SVE construction and operation and maintenance costs along with the chemical oxidation pilot study.

Construction of the OU 1 SVE system was completed June 20, 2005. The system completed one year of operation on June 20, 2006; however, the system was temporarily shut down, pending evaluation of system effectiveness and performance of the chemical oxidation pilot study.

Two rounds of injections for the chemical oxidation pilot study have been completed in the surficial aquifer. The DEP review of the post injection data led the Department to question the efficacy of the chemical oxidation remedy. DEP contracted with Geosyntec Consultants to perform an independent review of the site conditions and recommend a course of action. Based on the Geosyntec review and EPA comments on the review, it has been decided to perform an additional round of MIP and a third round of chemical oxidation, with the option of a third round of MIP to determine the coverage and efficacy of the injections. The EPA also restarted the SVE

system and operated it for approximately 4 to 5 months but has since decided that the system is not effectively removing contaminant mass from the vadose zone and has permanently terminated operation of the system.

The third chemical oxidation injection event was completed in November 2011 and a recirculation system was installed, but proved to be ineffective, possibly due to manganese dioxide precipitation clogging the surficial aquifer. EPA proposed the temporary installation of a multi-phase extraction system to attempt to “shock” the aquifer to get better oxidant distribution. DEP concurred with this recommendation and the one-day event took place in June 2012. Based on a review of the MPE data, the event appeared to have been successful and the EPA planned a second, longer event later in 2012. This second event was not as productive as the first, and further MPE events have been permanently put on hold.

OU 1: DEP and EPA signed an SSC amendment to perform a series of on- and offsite sampling events including soil sampling, shallow groundwater sampling onsite and a sampling event for the offsite permanent monitoring well network. An onsite walk-through inspection was completed in December 2013, and field work began in March 2014. Preliminary data indicates that there is less free product than previously observed. However, additional onsite source removal options are still under consideration.

OU 2: The OU 2 RI was completed in April 2007. A Feasibility Study, to support selection of the Floridan Aquifer groundwater remedy, has been postponed until it has been determined that source removal/treatment efforts are effective. Sampling of offsite downgradient monitoring wells has been completed as mentioned above.

Schedule

Current plans are to perform an interim source removal of highly contaminated onsite soils by electrical resistive heating (ERH). Groundwater concentrations would also be reduced by this method. The EPA has signed an Interim Amended Record of Decision (IAROD) for this remedy. DEP concurs with this remedy and has signed a new State Superfund Contract to cover 10% of the remedial costs.