

Gulf States Chemical
County Road 158
Lloyd, Florida
County: Jefferson
District: Northeast
Site Lead: Waste Cleanup Program
Approved for Cleanup: February 28, 2002
ERIC ID # 3902

Site Description and History

The Gulf States Chemical site is in a rural area approximately 2 miles from the town of Lloyd in Township 01N, Range 03E, Section 14 at 30° 28' 42.7899" N, 84° 00' 00.4811" W. The site covers an area of approximately 6 acres including an office, warehouse, two elevated uncovered storage tank areas, and two evaporation/percolation ponds. The former Gulf States Chemical Company repackaged, stored, and distributed chemicals including acids, bases, and organic solvents between 1975 and 1983. The plant received an estimated 15 drums (55 gallon each) of chemical residues daily during the operation period. These drums were rinsed and refilled with other chemicals for sale and distribution. Tank rinsate was discharged to the evaporation/percolation ponds. At least 130 drums were observed onsite by the Florida Department of Environmental Regulation (FDER, now DEP) in 1982. It has been reported that runoff from leaking tanks was directed to a drainage ditch located to the south of the property.

Gulf States entered a Consent Order with FDER in May 1983 and a plan for cleanup was approved in July 1983. The remedial action included installation of a downgradient interceptor trench for the surficial aquifer and a Floridan Aquifer recovery well. Recovered groundwater was treated using an air stripper and discharged to the site by spray irrigation. Groundwater was sampled for total volatile organic compounds (VOCs) on a biannual basis. Concentrations of total VOCs fluctuated by more than an order of magnitude since 1989 with no clear pattern. Groundwater samples collected in June 2002 were analyzed for specific volatile contaminants. *Cis*-1,2 dichloroethene (CIS) and trichloroethene (TCE) exceeded state drinking water standards in the surficial aquifer. These contaminants, plus tetrachloroethene (PCE) exceeded drinking water standards in the Floridan aquifer.

Threat

Contaminants, including PCE, TCE, CIS and *trans*-1,2-dichloroethene (TRANS), exceed drinking water standards in the surficial and Floridan aquifers on- and offsite. Site soils exceed leach-based Soil Cleanup Target Levels (SCTLs) for PCE and TCE. This contamination poses a potential threat to potable wells near the site. The site drains toward Lloyd Creek, approximately ¼ mile from the site. The creek flows north toward Creek Sink and Lake Drain Sink about ¾ and 1 mile from the site, respectively, and ultimately to Lake Miccosukee. Lloyd Creek is reportedly used for swimming by residents. Contamination in surface runoff from the site potentially threatens surface waters in Lloyd Creek as well as groundwater via Creek Sink and Lake Drain Sink.

Response Strategy and Status (December 2020)

The site was accepted for state funded cleanup in February 2002. Preliminary data from samples taken in July and August 2004 indicated groundwater contamination by chlorinated solvents extending offsite towards the south and west in both the surficial aquifer and Floridan Aquifer. Pre-existing, but non-functional groundwater treatment equipment was demolished and relocated in December 2005. Soil data collected in March and June of 2006 indicated PCE above leach-based SCTLs. Most of the contaminated soil was in the southwest portion of the site, within an area of the former drum rinse station. This area of soil contamination was further delineated in October 2006. In February 2007, the contaminated soils in the former drum rinse area were excavated to the groundwater table. During the excavation, approximately 218 tons of soils were removed and 300 gallons of Hydrogen Release Compound (HRC™) were placed in the bottom of the excavation to assist with the bioremediation of residual soil and groundwater contamination. The soil was characterized as non-hazardous and disposed of offsite.

Additional shallow monitor wells were installed in May 2007 to further delineate the groundwater contamination both on- and offsite. In June 2007, WRS collected groundwater samples from all onsite monitoring wells, and collected surface and sediment samples from Lloyd Creek. The data collected during the June 2007 event and previous assessment activities were summarized in a preliminary Site Assessment Report (SAR), submitted in September 2007. The groundwater data indicated that concentrations of contaminants in upper Floridan monitoring wells have decreased significantly since 2004. However, concentrations remain above the groundwater cleanup target levels (GCTLs) for VOCs and chloroethane. There were no contaminants detected in sediment or surface water samples collected during the 2004 and 2007 sampling events. Assessment activities were completed in April 2008.

The final SAR was completed in June 2008. A limited source removal was conducted in September 2008 to address localized areas with arsenic exceeding soil criteria for residential use. No further soil remediation is anticipated.

Groundwater monitoring continues to show concentrations that exceed state GCTLs but are below Natural Attenuation Default Concentrations (NADCs). There is a clear decreasing trend shown in the analytical data. The plume shows that it is stable and shrinking in size. Due to funding, groundwater monitoring was not conducted in 2010, but was conducted in 2011. In the 2011 sampling event, 1,4-dioxane was sampled for and found in groundwater above GCTLs but below NADCs. Groundwater sampling was conducted in November 2012 and included the installation and sampling of additional monitoring wells to further define the depth of the plume. Offsite wells continue to show concentrations above applicable GCTLs. In October 2013, five of the nine wells sampled in the surficial aquifer had GCTL exceedances, but none had contaminant concentrations exceeding NADCs. Five of the eight wells sampled in the Floridan Aquifer contained no GCTL exceedances, and no contaminant concentrations exceeded NADCs. In November 2014, contaminant concentrations detected in the Surficial Aquifer showed significant increases in PCE, TCE, CIS, 1,1-DCE, and vinyl chloride (VC). Increases in contaminant concentrations may have been related to the drop in the water table relative to previous sampling events. None of the downgradient, offsite Floridan Aquifer wells produced groundwater samples with MCL/GCTL

exceedances. Contaminant concentrations in groundwater samples collected from the Floridan Aquifer monitor wells continue to slowly decline.

Groundwater monitoring was conducted at the site on October 28, 2015. Three wells in the surficial aquifer contained MCLs/GCTL exceedances for PCE, TCE, CIS, 1,1-DCE, VC, and chloroethane. In the Floridan Aquifer, only the two source property wells produced groundwater samples with contaminant concentrations exceeding MCLs/GCTLs. for PCE, TCE, CIS, 1,1-DCE, VC, and 1,4-dioxane, with TCE, CIS, 1,1-DCE, and VC increasing from the previous sampling event.

Groundwater monitoring was conducted at the site on December 7, 2016. Exceedances of GCTLs were observed in onsite and offsite shallow wells, and onsite deep wells. The extent of impacts greater than GCTLs in the downgradient direction is currently not defined. No contaminants were detected in concentrations exceeding NADCs.

The most recent groundwater monitoring data are from January 31, 2018. Surficial aquifer exceedances of GCTLs were detected in one offsite shallow well and one onsite shallow well. Floridan aquifer exceedances were found in two onsite deep wells.

Schedule

Based on apparent property ownership changes the Department is currently not conducting further work on site. The DEP Project Manager will reach out to the Northeast District regarding site ownership changes and further work.