

Trans Circuits, Inc.
210 Newman Way
Lake Park, Florida
County: Palm Beach
District: Southeast
Site Lead: EPA
Placed on National Priorities List: February 4, 2000
ERIC ID # 3907

Site Description and History

The Trans Circuits site is located at 210 Newman Way in a commercial/industrial area of Lake Park on a 1-acre parcel of the Tri-City Industrial Park in Township 42S, Range 43E, Section 20 at 26° 47' 42.6970" N, 80° 04' 25.1914" W. The site was originally owned and operated by Etched Products from 1976 to April 1978 when Trans Circuits, Inc. purchased it. Trans Circuits operated as an electroplating and manufacturing plant, producing electronic components and sub-assemblies for electronic circuit boards from 1978 until 1985 when operations were discontinued. Existing structures at the site include a building, remnants of a former air stripper, the walls, and pad of a former evaporation/percolation pond, and 3 drainage grates where the storm water drain field is located.

Trans Circuit completed a RCRA permit application in November 1980 and was listed as a large quantity generator of hazardous wastes. Little data is available prior to 1981 concerning disposal practices for wastewater generated during facility operations. An evaporation pond lined with a synthetic membrane was constructed in 1981 but proved to be inadequate for the volume of wastewater being generated, in particular during rainfall events. Removal of part of the liner to facilitate percolation did not provide the needed capacity. A wastewater treatment plant was constructed in 1982 to treat electroplating wastewater in addition to a centrifuge to de-water chemical sludge prior to offsite disposal in a landfill. Approximately 336,000 gallons of effluent per month was reportedly generated, with one report indicating exceedances of effluent discharge criteria for copper, fluoride, and lead. A Florida Department of Environmental Regulation (FDER, now DEP) inspection in response to an anonymous complaint in 1983 revealed visible sludge in the evapo-percolation pond, puddles of liquid outside the pond, and 100 drums of unidentified waste onsite. A 3-foot wall was constructed in 1983 in an attempt to control the frequent episodes of effluent overflow. As a condition of the December 1984 discharge permit, Trans Circuits began monitoring the effluent for volatile organic constituents (VOCs). A February 1985 effluent sample confirmed the presence of the chlorinated VOCs, tetrachloroethene (PCE), 1,1,1-trichloroethane and trichloroethene (TCE).

Groundwater contamination was confirmed by FDER in May 1985 in a study of the Riviera Beach municipal well field. In 1987, Trans Circuit installed a groundwater recovery well and groundwater treatment system, which operated until 1990 when it was discontinued due to lack of funds to continue its operation. In 1991, VOC contamination was identified in groundwater from a monitoring well about 250 feet east of the site and resulted in the installation of additional monitoring wells that confirmed a groundwater contaminant plume extending east of the site. A fluoride plume was also identified to the north of the site. The EPA completed additional site sampling in 1994 to determine the source of the groundwater contamination. Soil and sediment

samples showed elevated concentrations of metals and several polynuclear aromatic hydrocarbons (PAHs) onsite. An Expanded Site Investigation was completed in 1998 and included the installation of 16 additional monitoring wells, along with the collection of 35 soil samples and 35 groundwater samples. The resulting information was used to evaluate the site for federal listing under Superfund.

Threat

Groundwater in the surficial aquifer, the primary source of drinking water in the area, is contaminated by chlorinated VOCs, fluoride, and nickel. Migration of the VOC plume has resulted in contamination of the P-17 municipal well in the City of Riviera Beach well field, located approximately 2,800 feet south/southeast of the Trans Circuits site. The City temporarily discontinued use of P-17 in 1984 and installed air strippers in 1988 to pre-treat public drinking water. Installation and hookup of a replacement municipal well to the Riviera Beach public water supply system was accomplished in 2006.

Soils with PAHs exceeding soil criteria for commercial/industrial use over a small area of the site were identified in the Remedial Investigation. EPA completed a soil removal in February 2004 to address the potential public exposure risk posed by these soils under a commercial/industrial land use scenario. Additional sampling in 2012 demonstrated that remaining PAHs in soils are not related to former site operations and that land use restrictions are not necessary for protection of public health.

Response Strategy and Status (December 2020)

The Trans Circuits site was proposed for the National Priorities List (NPL) in October 1999 and finalized in February 2000. The Remedial Investigation was completed and the final report submitted in May 2000. This combined with the results of the ESI demonstrated that the surficial aquifer is contaminated with chlorinated VOCs to depths exceeding 150 below land surface. The VOC groundwater plume consists primarily of TCE, 1,2-dichloroethene (1,2-DCE) and lesser vinyl chloride (VC) in concentrations above drinking water standards and extending approximately 2,800 feet south-southeast offsite. A metals groundwater contaminant plume comprised of nickel and fluoride has also been identified and extends offsite several hundred feet to the north and east. Onsite PAH contamination was identified in soils at levels above the State's soil cleanup target levels under an industrial land use scenario. A Feasibility Study was completed to support selection of the Superfund remedy.

In April 2001 following a public meeting to present the proposed site remedy, the EPA signed a Record of Decision (ROD), with DEP concurrence. The ROD identified the selected remedy as consisting of in situ chemical oxidation to address the chlorinated VOC contamination in groundwater, monitoring with natural attenuation to address the fluoride/nickel groundwater plume, and removal of approximately 200 cubic yards of PAH contaminated soils with offsite disposal at a permitted landfill. In addition, the ROD specified that the City of Riviera Beach would be reimbursed for relocation of the contaminated municipal well to a clean area of the

aquifer, and for future operation and maintenance costs associated with the pretreatment system at the municipal well field, until well relocation was accomplished.

The EPA will complete the site remedy using Superfund monies. A 10 percent State cost share is required to support construction and operation and maintenance of the remedy under the fund lead cleanup. The EPA and DEP signed a Superfund State Contract (SSC) in September 2002 to cover costs associated with the interim wellhead treatment at the City of Riviera Beach well field. Design of the soil removal and the replacement municipal well including well location selection was completed in May 2003. The EPA and DEP executed a second SSC in September 2003 to fund the soil removal and installation and connection of the replacement municipal well. The soil removal was completed in February 2004. The draft Removal Report was completed in July 2004. Documentation of confirmatory soil sampling results was incorporated into a final Removal Report in 2009.

Installation of the replacement municipal well to the Riviera Beach public water supply system was completed in the fall of 2005. EPA conducted an inspection of the replacement well in January 2006. Hookup of the replacement municipal well to the public water supply system was accomplished by the City in February 2006. Federal reimbursement for ongoing well head treatment under the Superfund State Contract was discontinued upon completion of the replacement well connection.

The final remedial design work plan for field pilot treatability testing for the groundwater remedy was completed in April 2006. Ongoing design activities for groundwater remediation include bench and pilot scale testing of chemical oxidation and in situ bioremediation for treatment of contaminated groundwater; installation of additional wells and subsurface borings; and groundwater sampling to complete delineation of the groundwater contaminant plume. Groundwater testing and installation of onsite injection wells was completed in 2007.

The bioremediation field pilot to test the effectiveness of an in situ bioremediation groundwater remedy began at the site in November 2008 with injection of carbon amendments into the contaminated aquifer to stimulate bioremediation. Groundwater monitoring was conducted through September 2009 to track the effectiveness of this technology. A preliminary design for a groundwater bioremediation remedy was submitted in August 2009. The final draft design was submitted in December 2009. DEP recommended soil and groundwater sampling beneath the former facility building to determine the need for additional source remediation to address onsite chlorinated solvent contamination (VOCs) and promote the success of the groundwater bioremediation remedy.

EPA issued an Explanation of Significant Differences (ESD) in September 2010, requiring additional onsite soil sampling be conducted to determine if site related PAHs remain above State residential soil cleanup target levels. A soil removal would be conducted if necessary, to address these soils, thus eliminating the need for an institutional control limiting future site use to commercial/industrial as envisioned by EPA's original site remedy. The ESD also clarified that the in situ groundwater remedy would consist of in situ bioremediation, rather than in situ chemical oxidation, based on more recent pilot testing during the groundwater design.

A Superfund State Contract (SSC) was signed by DEP and EPA in 2011, committing the State to a 10 percent cost share for the Superfund groundwater remedial action and an additional soil removal. Groundwater monitoring and additional onsite and offsite assessment including installation of additional monitoring wells were conducted in 2012 to evaluate potential source areas, better delineate the proposed groundwater treatment area, and provide baseline concentrations prior to implementation of the groundwater remedy. Soil and groundwater results from samples collected beneath the former facility building confirmed that a source remedy in that area is not necessary. Additional onsite soil sampling results presented in the January 2013 polynuclear aromatic hydrocarbon (PAH) Memorandum documented that site related PAHs in soils are not present at concentrations above unrestricted use criteria and that removal and/or an institutional control limiting the site to commercial /industrial land use is not necessary.

Groundwater assessment and sampling results were incorporated into the final March 2013 remedial action work plan which specified 3 offsite treatment areas where the more highly contaminated zones between 180 and 245 feet bls are targeted for in situ bioremediation. Injection of amendments consisting of a carbon source, nutrients and micro-organisms to augment in situ bioremediation of contaminated groundwater was conducted from June through August 2013.

EPA provided a Remedial Action (RA) Report in March 2014 documenting implementation of the in situ groundwater remedy and initial post-injection performance monitoring results. A final RA report was provided in September 2014 and included additional performance data to support EPA and DEP evaluation of the effectiveness of the first remedial injection, the need for additional injections of amendments, and a determination that the groundwater remedy is “operational and functional”. In October 2014, EPA and DEP concluded that the site remedy was operational and functional. The Third Five Year Review Report was signed on September 7, 2017, evaluating the progress and effectiveness of the site remedy.

An amended SSC was been routed to EPA in August 2018 for additional well installations, groundwater sampling, and reporting. A revised Sampling Plan was written in October 2019. EPA’s contractor installed 10 new monitoring wells to 225 ft bls in February 2020 and sampled groundwater from all new and existing monitoring wells in March 2020. A Technical Memorandum was written summarizing the field events and groundwater sampling results in July 2020. Recommendations in the Report are for collection of DHC in the groundwater and to further delineate the groundwater plume by sampling or installing monitoring wells to the east-northeast of the site.

Schedule

Operation and maintenance of the groundwater remedy is ongoing, including performance monitoring. Groundwater monitoring will be conducted in accordance with the remedial design and remedial action work plan to confirm continued reductions in groundwater contaminant levels and compliance with underground injection control rules. Additional in situ treatment may be

performed if necessary, to ensure continued decline in groundwater contaminant concentrations. Monitoring will continue until groundwater cleanup target levels are met.