

Florida/Superior Plating
2885 46th Avenue North
St. Petersburg, FL
County: Pinellas
District: Southwest
Site Lead: Waste Cleanup Program
Site Accepted for Cleanup: May 22, 2015
ERIC ID # 3966

Site Description and History

The former Florida/Superior Plating site is in St. Petersburg, Florida. The site is an 80 × 190 ft parcel, located at 2885 46th Avenue North in a primarily commercial/industrial area (Joe's Creek Industrial Park) in Township 31S, Range 16E, Section 02, at 27° 48' 50.9842" N, 82° 40' 20.5288" W. The property was occupied by an electroplating facility, which provided other manufacturers with metal finishing (plating) services. The principal onsite structure is an 8,250 ft² building, built in 1972. The areas around the building are paved, except for a small rectangular area on the northern margin of the building and a small rectangular area near the front door. All surrounding properties are occupied by industrial entities, which include: Surface Engineering & Alloy, Inc. (a thermal spray-on protective coating application service located next door, on the west) and Omega Printed Circuits (located directly north of the site on 47th Avenue North).

Florida Plating (later named Superior Plating) operated at the facility from the early 1970s through the early 1990s. Specific onsite activities included copper, cadmium, nickel, black-chrome, chrome, electro-less nickel, acid and alkaline tin plating, as well as chemical conversion coating of aluminum, and phosphate and black oxide coatings. The operational regimen consisted of cleaning work objects in bases and strong acids, rinsing objects with water, plating the objects in designated metal baths, and rinsing the plated objects. The historical incidence of chlorinated solvents in the plating area also suggests that tetrachloroethene (PCE) had also been used to clean work objects prior to electroplating.

Threat

The facility closed in 1992 and is currently used as a warehouse for the storage of building supplies. Several samples of soil and shallow ground water were collected from the site after the facility was closed. Analyses of the ground water samples collected on-site revealed concentrations of chromium (356 µg/L), PCE (5,900 µg/L), vinyl chloride [VC (1,300 µg/L)], and trichloroethene (TCE) (970 µg/L) that exceed the corresponding Maximum Contaminant Levels (MCLs). Soil concentrations of bromomethane (0.077 mg/kg), cadmium (174 mg/kg), hexavalent chromium (120 mg/kg), cyanide (320 mg/kg), and PCE (0.79 mg/kg) exceeded Florida Soil Cleanup Levels (SCTLs) for leachability to ground water.

In 1997, the facility signed a Consent Order with Florida DEP addressing further investigation and cleanup. The following year, waste containment structures and contaminated soils were removed. However, confirmatory post-removal soil samples exceeded leachability SCTLs and groundwater samples continued to exceed MCLs. Further investigative work required by the Consent Order was canceled, after responsible parties reported financial insolvency.

Although no potable wells exist within four miles of the site, a nearby creek is located 350 feet south of the site. The creek provides habitat for federally-designated endangered and threatened species and presumably supports recreational and/or subsistence fisheries.

Metals known to have been plated onsite (i.e., cadmium and chromium), chlorinated solvents (i.e., PCE) commonly used by electroplaters to clean work objects before electroplating, and PCE breakdown products (TCE, *cis*-1,2-dichloroethene [CIS]) were identified in onsite soil and downgradient groundwater and creek-bed sediments at concentrations significantly above background. The principal source of the contamination appeared to be highly contaminated soil in the former plating area, where concentrations of cadmium, chromium, cyanide, PCE, TCE and CIS, were detected well above SCTLs for leachability. A contaminant plume, comprised of high concentrations of PCE, TCE and CIS (far exceeding GCTLs), was documented, emanating southward from an area of contaminated surface and subsurface soil in the former plating area. Evidence of soil "smearing" by chlorinated solvents, via contact with the contaminant plume, was also indicated in soil samples collected downgradient of the plating area. In addition, observed releases of chlorinated solvents to sediment in Joe's Creek, directly downgradient of the contaminant plume, established that the influence of the plume extends into the creek. Furthermore, an observed release of cadmium to creek-bed sediment, concurrently collected at a site-related stormwater outfall to the creek, strongly suggests that site runoff has also affected the creek.

Response Strategy and Status (December 2020)

The site was accepted for state-funded cleanup on May 2015. The site was assigned to Chastain Skillman (CSI) for assessment in March 2016. The site initiation process began March 2016. The Site Access Agreement was signed by the Real Property Owner in July 2016.

CSI's Site Assessment Work Plan (SAWP) was received September 2016, for Florida/Superior Plating and was approved for a Site Assessment. A site visit was completed by Chastain Skillman (CS) on August 2016 to document the site and adjacent land use conditions with a photographic record. An interview was also conducted with the site tenant to document the current use of the property and evaluate the feasibility of sampling within the building.

The general Scope of Work for the assessment is described in the SAWP. During subsequent discussions with the Department it was decided to implement the work in two phases. The first phase includes investigation of the source property and the adjacent parcel to the north, which was previously used for treatment operations. The second phase includes extending the assessment offsite to fully define the extent of any impacts identified onsite.

The Site Assessment was tasked in February 2017, and the first phase was conducted in April, July, August, and September 2017. A total of 114 soil samples were analyzed for arsenic, cadmium, chromium, lead, mercury, nickel, silver, hexavalent chromium, and total cyanide. Twenty-eight samples were tested for Volatile Organic Compounds (VOCs). In addition, Modified Active Gas Sampling (MAGS) was conducted. For groundwater assessment, samples were collected from various monitoring wells and Direct Push Technology (DPT) locations and were tested for Volatile Organic Analytes (VOAs) and Volatile Organic Halocarbons (VOHs).

Soil contaminants that exceeded SCTLs include PCE, TCE, VC, CIS, methylene chloride (DCM), arsenic, cadmium, chromium, lead, nickel, and cyanide. Groundwater contaminants that exceeded GCTLs include PCE, TCE, CIS, *trans*-1,2-dichloroethene (TRANS), VC, 1,1-dichloroethene, cadmium, chromium, and nickel, as confirmed by onsite groundwater monitoring in July 2018. Groundwater contaminated by VOHs has migrated offsite and has yet to be delineated.

Schedule

CSI is conducting phase two of the site assessment activities. CSI will work to delineate the offsite contamination, as well as to address the onsite contamination. A supplemental site assessment report is due May 2021.