

Reeves Southeast Galvanizing Corporation
9510-20 East Broadway Avenue
Tampa, Florida
County: Hillsborough
District: Southwest
Site Lead: EPA
Placed on National Priorities List: October 23, 1981
ERIC ID # 3801

Site Description and History

The Reeves Southeastern Corporation (Reeves) consists of two separate and active facilities, which are both located on East Broadway Ave. in Tampa and permitted by the Southwest DEP District Office. The former Reeves Southeastern Galvanizing (SEG) Division occupied approximately 17 acres on the north side of East Broadway Ave., in Township 29S, Range 20E, Section 07 at 27° 58' 23.1969" N, 82° 20' 28.3431" W, and operated as a hot dip galvanizing plant for coating various metal materials until 1996. Wash water and rinse baths from this process produce an acidic liquid with high concentrations of iron, zinc, and chromium. From the mid-1960s until 1982, the waste stream was discharged into two unlined percolation ponds on the property. In 1982, Reeves removed the liquids from these ponds, installed a wastewater pretreatment system and began discharging its wastewater to the local publicly owned treatment works (POTW). Industrial Galvanizers of America (IGA) began leasing the site in 1996 and continues to operate as a hot dip galvanizing plant.

The Reeves Southeastern Wire (SEW) Division is approximately 11.5 acres in size and is located on the south side of East Broadway Ave., 1/2 mile west of Faulkenburg Road. Reeves Wire manufactures wire for the production of chain link fence and wire mesh. This facility also has a chain link fabric galvanizing process similar to the hot dip process. Two abandoned unlined percolation ponds have been identified on the property. This facility is bordered to the west by the Peak Oil Superfund Site.

Threat

The surficial groundwater aquifer is contaminated with metals including cadmium, chromium, lead, and zinc. Although it is classified as a G-II aquifer and a potential source of drinking water, the 1998 well survey indicated that no private potable wells exist within the affected area of the site. An onsite Floridan monitoring well has shown that site-related contaminants have not migrated into the underlying primary source of drinking water, the Floridan Aquifer. However, discharge of contaminated groundwater to nearby surface water and wetlands is of concern.

Onsite soils have been remediated to meet the Superfund cleanup goals for the protection of human health and the environment.

Response Strategy and Status (December 2020)

In October 1981, the Reeves Southeastern Corporation was placed on the National Priority List. The Florida Department of Environmental Regulation (FDER, now DEP) Southwest District initially provided the lead management role for enforcement and cleanup. In April 1985, EPA

assumed the lead management role and in June 1985, Reeves agreed to provide the EPA with a Remedial Investigation/Feasibility Study (RI/FS) work plan. In February 1989, final work plans were submitted for the Reeves site-source RI/FS and the area-wide hydrological RI/FS for the Reeves, Peak Oil, and Bay Drum sites. In February 1989, the Reeves Corporation signed a Consent Order with EPA for completion of the RI/FS.

The draft Phase I site-source RI/FS was completed in July 1990. The Phase I area-wide hydrogeologic RI/FS was completed in January 1991. The RI identified elevated concentrations of numerous metal contaminants in on-site soils. No organic contaminants were found in the soils. Low levels of pesticides, semi-volatile organics and one polychlorinated biphenyl (PCB) hit were found in sediments in an abandoned percolation pond. Arsenic, manganese, cadmium, zinc and nickel, as well as low levels of several semi-volatile organic compounds, were identified in the groundwater.

The Phase II site source RI fieldwork was completed in May 1991 to further define the extent of contaminated soils and support evaluation of remedial action alternatives. The final Phase II site source RI/FS and final Phase II area-wide hydrologic RI/FS reports were completed in June 1992.

A public meeting was held by EPA in August 1992 to present the proposed alternative for source remediation. In October 1992, EPA signed a Record of Decision (ROD) for Operable Unit 1 (OU 1), which specified that contaminated soil and sediments would be excavated and treated by solidification/stabilization. The treated material would be disposed of onsite above the groundwater table and capped with a vegetated soil cover. The majority of contamination occurred on the SEG property.

A public meeting was held in February 1993 to present the proposed remedy for groundwater cleanup. In September 1993, EPA issued the ROD for OU 2, documenting the selected remedy for contaminated groundwater in the surficial aquifer and surface waters of the Unnamed Creek at the site. The remedy consists of: 1) natural attenuation of the surficial aquifer contaminant plume accompanied by groundwater monitoring to confirm the effectiveness of natural attenuation in meeting site cleanup goals; 2) plugging and abandonment of onsite production well(s) and installation and monitoring of a new Floridan aquifer well to confirm that there is no vertical movement of contaminants into the Floridan Aquifer; 3) completion of a private well survey within the contaminated area; 4) implementation of institutional controls preventing groundwater use in the contaminated area and; 5) construction of a barrier or groundwater control structure to prevent continued discharge of contaminated groundwater into the Unnamed Creek (determined to be Waters of the State). The ROD specified that if groundwater concentrations do not decline at the rate predicted by previous models, a groundwater recovery and treatment system would be implemented. If private wells are shown to contain related contaminants, the owners will be provided an opportunity to connect to the public water supply system without incurring connection costs.

EPA signed the June 1994 Wetland ROD after presenting the proposed plan for wetland remediation at the May 1994 public meeting. The selected remedy is "No Action with Monitoring" of surface water and sediments during the period of soil and groundwater remediation. The intent

of the monitoring is to confirm that no further action is necessary for improvement in the quality of the wetlands to naturally occur.

In March 1994, the PRPs signed a Consent Decree to conduct the Remedial Design/Remedial Action (RD/RA) for soils and groundwater at the site. The final Remedial Design for soils was submitted in March 1996. Construction for the soil remedy began in May 1996. By July 1996, the majority of contaminated soil had been excavated and stockpiled onsite for treatment. Treatability study data submitted in December 1996 indicated that a soil admixture capable of meeting performance criteria for solidification had not been successfully developed in the laboratory. The data indicated, however, that the untreated soils were non-hazardous as defined by State and Federal regulations. In April 1997, EPA submitted an Explanation of Significant Differences (ESD) for the OU 1 ROD which authorized the offsite disposal of approximately 6,000 cubic yards of contaminated soil at a State of Florida Class 1 lined landfill. Remedial action for soils consisting of excavation and offsite disposal of contaminated soils was completed in July 1997.

The Draft Remedial Design Work Plan for OU 2 groundwater remedy was submitted in August 1995. The work plan included a treatability study to evaluate groundwater extraction and treatment by chemical precipitation; and described the design of the contingent groundwater extraction and treatment system, construction details for a Floridan monitoring well, and the implementation of a private water well survey. The Upper Floridan Monitoring well was installed in 1997. Monitoring confirmed that groundwater contamination of site related contaminants had not vertically migrated into the Floridan Aquifer at the site. The well survey was completed in 1998 and confirmed that there were no private water supply wells within 800 feet northwest of the site. Remedial Design of the groundwater remedy including the barrier or groundwater control structure was completed in 1999 and modified in 2000 due to migration of the plume past the limits anticipated in the original design. After delays related to site access issues, construction of the groundwater control barrier in the Unnamed Creek was completed as documented in the February 2004 Construction Report for the OU 2 Storm water Conveyance System.

Annual monitoring of the North Wetland and Unnamed Creek is ongoing as required by EPA's "No Action with Monitoring" remedy and the approved December 2001 Wetlands Monitoring Plan. The first annual monitoring results in the December 2002 Monitoring Report indicated that groundwater potentially discharging into the Unnamed Creek contained zinc and nickel at concentrations exceeding their respective 10 mg/L and 0.10 mg/L groundwater standards and exceeding the zinc surface water standard of 0.343 mg/L. While 2002 surface water concentrations in the Unnamed Creek were lower than previous years (up to 172 mg/L zinc in 1989), surface water contaminant levels still exceeded surface water standards with zinc at concentrations up to 7 mg/L. Aluminum, iron, lead, and mercury were also observed to exceed Florida surface water standards. The 2002 sediments samples contained elevated levels of PCBs, lead, chromium, and zinc, with zinc at concentrations up to 2,400 mg/kg. The August 2003 sampling results indicated that zinc in surface water and sediment in the Unnamed Creek had declined with concentrations of 2.9 mg/L and 240 mg/kg respectively. Zinc in sediment in the on-site ditch leading to the Unnamed Creek was detected at 7,500 mg/kg in 2003. Subsequent surface water and sediment monitoring presented in the December 2007 North Wetland and Unnamed Creek monitoring report have confirmed zinc above the DEP sediment quality guideline in sediments in the Unnamed

Creek. Data also indicated contribution of zinc from the onsite IGA facility storm water discharge which exceeds the storm water permit benchmark criteria. In 2010 IGA implemented some facility operations best management practices designed to improve the quality of the facility storm water discharge. DEP issued a Multi-Sector Generic Storm Water Permit in April 2011 which requires quarterly storm water monitoring and annual reporting of water quality.

Groundwater monitoring following the Superfund soil removal has been ongoing to confirm the continued decline of contaminant levels in groundwater and determine if the rate of natural contaminant decline meets that predicted by the selected remedy. The August 2001 Superfund Five Year Review coincided with the time frame prescribed in the ROD for review of the adequacy of the groundwater natural attenuation remedy. The EPA and DEP determined that the existing groundwater data was inadequate to confirm that attenuation was progressing at the prescribed rate. Additional groundwater contaminant assessment was conducted during the spring of 2004 to support evaluation of the ongoing natural attenuation remedy.

The November 2004 Modification One Report contained the results of the additional assessment and demonstrated that natural attenuation of metals contamination in the surficial aquifer was not occurring at an acceptable rate. In June 2005, Reeves submitted a pilot study proposal to support evaluation and design of an in situ treatment technology which would immobilize the metals in the subsurface soils below the water table, so that metals in groundwater would no longer exceed cleanup goals. Additional monitoring wells were also proposed to ascertain the adequacy of the barrier in preventing continued discharge of contaminated groundwater to the Unnamed Creek.

Additional groundwater assessment including monitoring well installation was completed in 2006. A bench scale study report documenting laboratory testing to evaluate in situ treatment of metals contaminated groundwater was completed in November 2006. Based on the bench scale results, a field pilot test was conducted at the site and results documented in a December 2007 pilot test report. Additional pilot testing was implemented in 2008 to see if fracturing of the aquifer would improve the delivery and range of influence of the in situ technology in the aquifer. A follow-up report with recommendations documenting those results was provided to EPA and DEP in July 2008. Both EPA and DEP expressed reservations regarding consistent distribution and effectiveness of the in situ treatment technology as a full scale remedy as well as the release of arsenic as a secondary reaction.

Additional monitoring wells were installed in June 2009 in the proposed test plot and additional field demonstration tests were conducted to see if adjustments could be made to minimize the release of natural arsenic and improve consistency in distribution and in situ treatment. The October 2009 Field Demonstration Report was submitted documenting the results which suggested that in situ treatment of metals using a calcium polysulfide mixture may be feasible in some areas of the site. This technology was retained for further evaluation in the feasibility study as a potential treatment alternative to be compared to other remedial alternatives to address metals contamination in groundwater.

The draft feasibility study (FS) was received in March 2010 and evaluates treatment alternatives for remediation of metals contaminated groundwater at the site. The revised FS was submitted in August 2011 and approved by EPA in May 2013. The FS identified Alternative 1, consisting of

in situ treatment using chemically induced sulfide precipitation, swale lining, monitored natural attenuation and institutional controls, as the highest-ranking alternative with a projected timeframe of 15 years for the site to reach the groundwater performance standards.

A pre-Design Work Plan proposing additional monitoring well installation and further bench and pilot testing of the recommended in situ groundwater treatment technology was submitted in November 2011, based on previous FS comments from EPA and DEP. Installation of the monitoring wells was completed in May 2012, followed by site wide groundwater and surface water sampling. The results will be used to support design of the amended groundwater remedy.

A proposed plan was issued by EPA in August 2013 to allow public input to the proposed in situ groundwater remedy. An Amended Groundwater ROD identifying the new groundwater remedy was issued by EPA in September 2014. The amended groundwater remedy consists of in situ chemical precipitation using an amendment which causes the dissolved metals contamination to precipitate out as stable minerals. The combination of in situ treatment of the more contaminated areas of the plume along with natural attenuation is expected to result in groundwater cleanup to health based standards. Onsite swales and the unnamed creek will be lined to prevent discharge of contaminated groundwater to surface water. Institutional controls will be put in place to ensure that future site land use remains commercial/industrial.

A draft Pre-Design Investigation Report and Remedial Design/Remedial Action (RD/RA) Work Plan for injection of the treatment amendment for in situ remediation of metals in groundwater was submitted in June 2015. The report included data collected based on the Pre-Design work plan to support design of the remedy. Review comments were provided by DEP in September 2015. Based on a determination that the RD/RA Work Plan was substantially complete, EPA authorized the PRP to initiate in situ treatment of contaminated groundwater on an offsite property in order to coordinate remediation with the ongoing offsite property redevelopment activities. Injections of the amendment began on the offsite property in May 2016 and completed in August 2016. The final RD/RA Work Plan was approved in August 2016.

The Fourth Five Year Review report was issued by EPA in September 2016. Recommendations included identification of potential ongoing sources that may be contributing to persistent contaminant levels in surface water and sediments in the Unnamed Creeks and adversely affecting the function and protectiveness of the OU3 remedy.

Implementation of the full scale onsite in situ groundwater treatment remedy began in November 2016 and amendment injections were completed in March 2017. A Construction Completion Report and Remedial Action Plan were completed associated with this effort. In February 2018, Industrial Galvanizers (IG) initiated construction of a storm water management system at the Reeves site to control discharge of storm water containing elevated levels of metals from the IG facility property into the Unnamed Creek. Storm water is sampled quarterly.

Schedule

Annual post- treatment groundwater and surface water performance monitoring is ongoing to determine if additional sodium polysulfide/sodium hydroxide injection activities are warranted to enhance progress towards attainment of OU2 performance standards. Annual monitoring data indicates performance standards for OU 2 and 3 have not yet been met. A five-year review will occur in 2021.