

Executive Summary

The 2-acre Airco Plating Co. Superfund site (the site) in Miami, Florida, is an active electroplating facility that operated throughout its National Priorities List (NPL) listing, remedy selection and cleanup. Between the mid-1950s and 1973, site operations contaminated soil and groundwater. Cooperation among the U.S. Environmental Protection Agency (EPA), Florida Department of Environmental Protection (FDEP), Miami-Dade County, potentially responsible parties (PRPs) and on-site businesses enabled continued operation of the site's businesses. Today, remedial activities are cleaning up site soils and groundwater, while allowing continued operation of site businesses.

Two businesses operate at the site – an electroplating facility and a commercial and residential awning manufacturing facility. This case study explores the site's cleanup and continued use, demonstrating the opportunities and beneficial effects of Superfund redevelopment in action.

Beneficial Effects

- On-site businesses employ about 65 people, providing over \$2.4 million in annual employee income.
- In 2014-2015, site properties generated \$27,588 in tax revenues, and had a total estimated property value of \$2,880,661.
- Incorporating the remedy into everyday business activities helps keep Airco Plating operating.

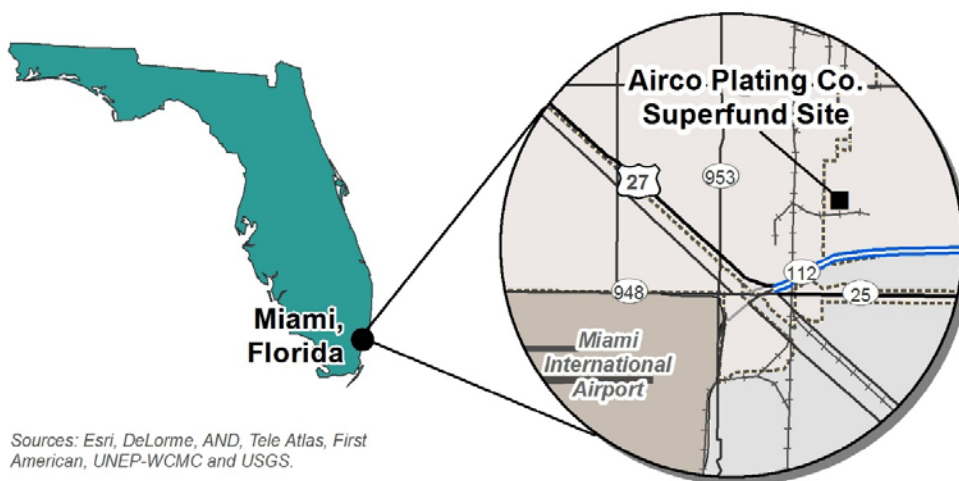


Figure 1. Location map for Airco Plating Co. Superfund site in Miami, Miami-Dade County, Florida.

Introduction

Superfund cleanups restore value to properties and can allow on-site businesses to continue operating. By enabling continued operation, mass layoffs are prevented and employees continue to earn a living. Superfund cleanups can also allow beneficial reuse of formerly-contaminated properties. This case study captures the beneficial effects of continued business operations and reuse at the Airco Plating Co. Superfund site.

The 2-acre site is located in Miami, Florida, in a predominantly industrial and commercial area, surrounded by other active businesses. There is a mobile home community 300 feet south of the site and the Miami Canal is about 2/3-mile southwest of the site. Over 2.6 million people live in Miami-Dade County.¹

Site History

Airco Plating Company, Inc. (Airco) began operating at the site in the mid-1950s. The company electroplates primarily steel, copper and brass items with zinc, brass, cadmium, chromium, copper, nickel and tin. During early operations, Airco discharged plating operations wastewater into three unlined percolation ponds through a permit from the Florida State Board of Health. When the Miami municipal sewer system was installed, Airco reformatted its wastewater disposal process. Around June 1973, Airco stopped using the ponds, backfilled and regraded them, and began discharging treated wastewater to the Miami municipal sewer system.

EPA investigated the site in July 1985, December 1986 and January 1987. When soil and groundwater contamination was confirmed, EPA listed the site on the Superfund program's National Priorities List (NPL) in February 1990.



Figure 2. Airco Plating Co. Superfund site.

¹ U.S. Census Bureau <https://www.census.gov/quickfacts/table/PST045215/00>

Site Cleanup

In November 1990, Airco entered into an Administrative Order of Consent to conduct the remedial investigation/feasibility study (RI/FS) for the site. In February 1993, EPA finalized the RI report and the Baseline Risk Assessment. The RI report documented metals contamination around the former percolation ponds, metals contamination next to the main building, and tetrachloroethylene (PCE) contamination in groundwater.

EPA selected a remedy in the 1993 Record of Decision (ROD), designed to prevent exposure to contaminated soil and to prevent further migration of metals and volatile organic compounds (VOCs) into the groundwater.

Soils

For soils, the ROD selected soil vapor extraction (SVE) of organic compounds, placement of a Resource Conservation and Recovery Act (RCRA)-type cap, and institutional controls to preserve the integrity of the cap. On August 22, 1994, EPA issued a Unilateral Administrative Order (UAO) requested by Airco so that Airco could perform remedial design (RD) and remedial action (RA) for the site. Airco installed the SVE system during spring 1995 and operated it from December 1995 to June 1999.

Airco began constructing the RCRA-type cap on May 25, 1999. Airco placed a geomembrane liner over soil contamination defined in the 1999 RD. Airco then installed a 4- to 6-inch-thick reinforced concrete cap over the liner. The concrete cap covers about 17,000 square feet, including the area treated by SVE.

Groundwater

For contaminated groundwater, the ROD selected extraction with subsequent treatment by air stripping and discharge of treated water to the publicly-owned treatment works (POTW) or to the surficial aquifer via a recharge gallery. Airco completed the groundwater extraction and treatment system in June 1997 and treatment is ongoing. Working closely with EPA, Airco incorporated components of the treatment system into everyday site operations.

Enabling Continued Use, Enhancing Protectiveness

Throughout its listing on the NPL, during cleanup, and now during operation and maintenance, Airco remained on site, continuing its business operations. However, continuing business operations was not always an easy task. The section below details how business operations were able to continue.

Industry Shift and Rebranding

George King founded Airco in 1955. Airco began by plating small objects like screws, fasteners, machine parts, electrical parts and components found in residential metering boxes. While commercial plating was the company's primary niche (about 80 percent of operations), Airco also performed aviation plating (about 20 percent of operations). Airco continued with commercial plating as its main source of revenue for four decades, even during its listing on the NPL, cleanup, and the early years of remediation.



Figure 3. The front of the Airco Plating facility.

In the 1990s, George King stepped down as president of the company and named his son, Michael King, as the new president. During the early years of remediation at the site (the late 1990s), industrial globalization began creating price pressure for domestic manufacturers, including metal finishing companies. Airco and other U.S. companies in the manufacturing supply chain found it very difficult to remain price competitive. Airco was at a crossroads and needed a way to rebrand itself in order to continue operating.

Michael King saw two options: either develop a new direction for the business or shut down operations. Because of Airco's experience in aviation plating, increasing the aviation portion of the business seemed to be the natural choice. However, there were complications; the company had to become Federal Aviation Administration (FAA)-certified in order to expand its aviation business and FAA-certification requires facilities to keep commercial and aviation operations completely separate, termed production segregation. Fortunately, Airco found a way to consolidate all commercial plating to one portion of the facility and keep the two plating operations separate.

In 2006, the company earned its FAA certification, allowing it to electroplate a larger share of aircraft parts, mainly landing gear and to a lesser extent, internal engine parts. Plating aircraft parts is now the biggest part of Airco's business, which is about 80 percent aviation plating and 20 percent commercial plating. Through this shifting process and incorporation of the remedy into business operations (discussed below), Airco has remained in business, offering superior craftsmanship in its line of business.

Remedy Incorporation into Business Operations

During the remedy selection process, EPA prioritized designing a remedy that would be compatible with continuing business operations. Because plating operations require lots of water, both EPA and Airco recognized an opportunity to incorporate the groundwater treatment process into business operations. With this in mind, EPA and Airco designed the groundwater remedy so that after air stripping and treatment of VOCs, treated water is directed to an on-site holding tank. Treated water is stored until it is used to rinse plated materials. After rinsing, the water is discharged to the POTW. Airco estimates that 20,000 to 30,000 gallons of treated water are used daily.



Figure 4. Daily operations at the Airco Plating facility.



Figure 5. Capped area where Paradise Awnings assembles custom-made awnings.

The southern capped portion of the site is located on an adjacent industrial property. Decades earlier, Airco leased the area for use as a percolation pond. It was excavated and capped during cleanup. When the Paradise Awnings Corporation started leasing the building next to this area for manufacturing purposes, the company became interested in leasing the capped area as well. The company owners met with site stakeholders to find out what leasing a Superfund property would mean. Paradise Awnings uses the space to construct awnings. The company also helps maintain the cap's integrity.

Beneficial Effects

The selected remedy protects human health and the environment while enabling continued operation and reuse of two on-site businesses, the Airco Plating Company and the Paradise Awnings Corporation. Together, these businesses bolster the region's economy, provide valuable services to the community, and help generate local and state sales and property tax revenues. The section below describes the specific beneficial effects of the two businesses at the site.

Airco Plating Company

Airco Plating employs a total of 42 people and contributes nearly \$1.7 million in annual employee income. Estimated 2015 sales for the company were almost \$5.5 million.

Paradise Awnings Corporation

Paradise Awnings Corporation designs, manufactures, and installs custom awnings for both residential and commercial properties. The company operates out of a large facility, utilizing in-house personnel in the manufacturing process. The business employs 23 people and contributes over \$740,000 in annual employee income. Estimated 2015 sales for the business were nearly \$3.4 million.

Property Values and Tax Revenues

On-site properties help generate property tax revenues that support local government and public services. During the 2014-2015 fiscal year, the six site property parcels generated nearly \$28,000 in property taxes for Miami-Dade County. In 2015, the site properties had a total estimated property value of \$2.9 million. On-site businesses that produce retail sales and services also generate tax revenues through the collection of sales taxes, which support state and local governments.²

"Throughout our time working together, I've realized that Airco and EPA share two common goals: doing what is right from an environmental standpoint and keeping our doors open. I'm thankful for that aspect of our relationship with the Agency."

-Michael King, Airco Plating President



Figure 6. Paradise Awnings Corporation, providing custom commercial and residential awnings.

² The combined sales tax rate in Miami-Dade County is 7.00 percent. This combined rate includes sales tax rates for the state, county and city. For more information, see the web page: <http://miami.about.com/od/governmentcityservices/a/salestax.htm>.

Conclusion

Throughout remedy selection and cleanup, Airco Plating superbly handled the challenges of Superfund remediation and industry change; this could not have been accomplished without the company's strong working relationship with EPA. Airco still operates today, providing the local economy with nearly \$1.7 million in estimated annual employee income and 42 jobs. The cleanup has also allowed productive reuse of the site, with Paradise Awnings Corporation, which employs 23 people and provides over \$740,000 in estimated annual employee income, operating on part of the site. Looking forward, EPA will continue working with Airco to support protective reuses and continued uses, and ensure the long-term stewardship of the site's remedy.

*For more information about EPA's Superfund Redevelopment Initiative (SRI), visit:
<http://www.epa.gov/superfund-redevelopment-initiative>.*



www.epa.gov

Reuse and the Benefit to Community Airco Plating Co. Superfund Site

Technical Appendix

Employment Information for On-site Jobs

EPA obtained the data included in this Technical Appendix directly from reputable sources, and reported the data as presented by those sources.

Information on the number of employees and sales volume for on-site businesses came from the Hoovers/Dun & Bradstreet ([D&B](#)) database. EPA also gathered information on businesses and corporations from D&B.

D&B maintains a database of over 225 million active and inactive businesses worldwide. Database data include public records, financials, private company insights, extensive global information, telephone numbers and physical addresses.

When Hoovers/D&B database research could not identify employment and sales volume for on-site businesses, EPA used the [Manta](#) database. These databases include data reported by businesses. Accordingly, some reported values might be underestimates or overestimates. In some instances, business and employment information came from local newspaper stories/articles and discussions with local officials and business representatives.

Wage and Income Information for On-site Jobs

EPA obtained wage and income information from the U.S. Bureau of Labor Statistics (BLS). Part of the U.S. Department of Labor, the BLS is the principal federal agency responsible for measuring labor market activity, working conditions and price changes in the economy. Its mission is to collect, analyze and disseminate essential economic information to support public and private decision-making. All BLS data meet high standards of accuracy, statistical quality and impartiality.

EPA used the BLS Quarterly Census of Employment and Wages database to obtain average weekly wage data for businesses at the Airco Plating Co. Superfund site. Average weekly wage data were identified by matching the North American Industry Classification System (NAICS) codes corresponding with each type of business with weekly wage data for corresponding businesses in Miami-Dade County. If weekly wage data were not available at the county level, EPA sought wage data by state or national level, respectively. In cases where wage data were not available for the six-digit NAICS code, EPA used higher-level (less-detailed) NAICS codes to obtain the wage data.

To determine the annual wages (mean annual) earned from jobs generated by each of the selected businesses at the Airco Plating Co. Superfund site, EPA multiplied the average weekly wage figure by the number of weeks in a year (52) and by the number of jobs (employees) for each business.

Table 1. Airco Plating Co. Superfund Site: Information for On-site Organizations and Businesses

On-site Business	NAICS Code ^a	NAICS Title	Number of Employees ^b	Average Weekly Wage (2014) ^c	Annual Wage (Mean Annual) per Employee	Total Annual Income ^d	Annual Sales (2015) ^b
Airco Plating Company, Inc.	332813	Electroplating, Plating, Polishing, Anodizing, and Coloring	42 ^e	\$763.00	\$39,676.00	\$1,666,392.00	\$5,470,000.00
Paradise Awnings Corporation	314910	Textile Bag and Canvas Mills	23	\$621.00	\$32,292.00	\$742,716.00	\$3,370,000.00
Total			65			\$2,409,108.00	\$8,840,000.00

^a NAICS code provided in the D&B database.

^b Data are from the D&B database, unless otherwise noted.

^c Average weekly wage per employee based on BLS 2014 Average Weekly Wage data.

^d Total annual income figures derived by multiplying "Number of Employees" by "Annual Wage (Mean Annual) per Employee."

^e Employee number obtained from Airco Plating President, Michael King on 5/12/2016.

Property Values and Local Tax Revenue Generated from Property Taxes

EPA obtained data on the most recently assessed values for property parcels at the Airco Plating Co. Superfund site in March 2016 through property records accessible through Miami-Dade County's online property appraisal database http://www.miamidade.gov/pa/property_search.asp. EPA also obtained 2015 property tax information for the site parcels.

Table 2. Property Value and Tax Summary for Taxes Payable in 2015

Parcel ID No.	Parcel Address	Total Market Value of Land and Improvements (2015)	Total Property Tax (2015)
30-3121-000-1060	3650 NW 46th Street Miami, FL 33142-3944	\$1,147,474.00	\$11,664.84
30-3121-000-0991	3636 NW 46th Street Miami, FL 33142-3944	\$100,616.00	\$874.74
30-3121-000-1052	3636 NW 46th Street Miami, FL 33142-3944	\$2,130.00	\$53.00
30-3121-000-1053	3636 NW 46th Street Miami, FL 33142-3944	\$5,441.00	\$121.78
30-3121-000-1056	4310 NW 36th Ave Miami, FL 33142-4220	\$1,200,000.00	\$7,061.69

Parcel ID No.	Parcel Address	Total Market Value of Land and Improvements (2015)	Total Property Tax (2015)
30-3121-000-1055 ^a	4440 NW 36th Ave Miami, FL 33142-4220	\$425,000.00	\$7,812.72
		\$2,880,661.00	\$27,588.77

^aThis property parcel is technically not on site, but is the location of the main Paradise Awnings facility that utilizes the capped area in the southern part of the Site. For this reason, it is being included in property value and tax calculations.