United States
Environmental Protection
Agency

Solid Waste and
Emergency Response
(5502G)

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Summer 1993

EPA

Superfund At Work

Hazardous Waste Cleanup Efforts Nationwide

Tri-State Plating Site Profile

Site Description:
A former electroplating facility in Columbus, Indiana

Primary Contaminants:
Cyanide, acids, cadmium, copper, chromium, lead, nickel, and arsenic

Potential Range of Health Risks:
Ingestion of contaminants could lead to kidney problems, high blood pressure, anemia or ulcers

Nearby Population:
30,000 people within the city

Ecological Concerns:
Scores of local birds died after drinking contaminated water

Year Listed on the NPL: 1986

EPA Region: V

State: Indiana

Congressional District: 9

Success in Brief

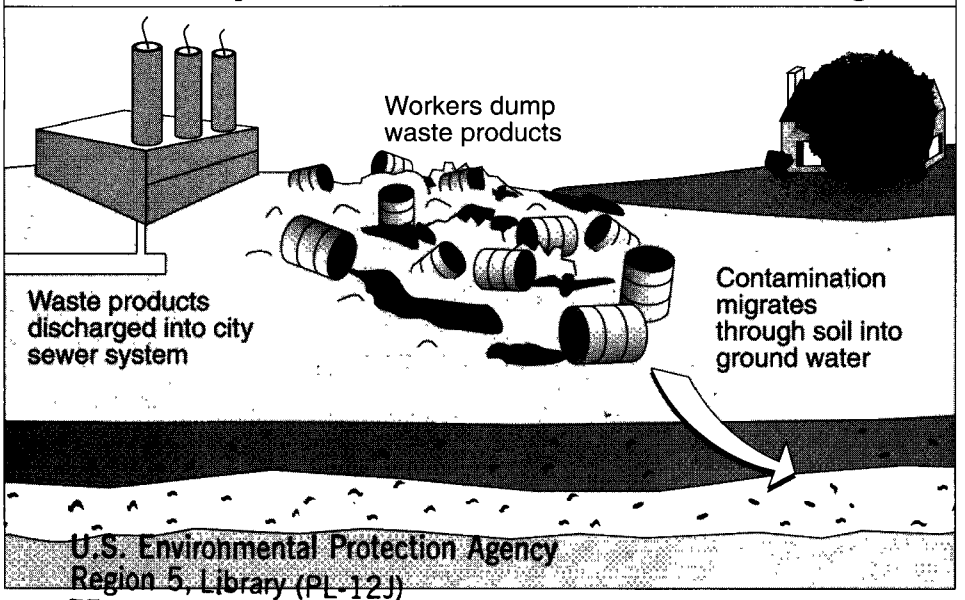
Accelerated Cleanup at Tri-State Plating

The U.S. Environmental Protection Agency (EPA) cleans up hazardous wastes on land, in the air, and in water. EPA's Superfund program encounters many situations never dealt with before, such as dump sites in residential areas, buried wastes in unknown amounts and concentrations, and hazardous chemicals leaking into drinking water sources. Each Superfund site is uniquely problematic, therefore every cleanup selected must meet the specific needs of the community. At the Tri-State Plating site in Columbus, Indiana, EPA:

- Removed 27 barrels of electroplating waste from this quiet neighborhood site;
- Demolished on-site buildings and removed more than 2,400 cubic yards of contaminated soil; and
- Accessed a municipal wastewater treatment plant to treat polluted ground water, saving approximately $700,000 in costs.

In addition to trimming five years off the cleanup schedule, EPA addressed community concerns regarding the actions being taken to remedy the site for future use.

A History of Contamination at Tri-State Plating



The Site Today

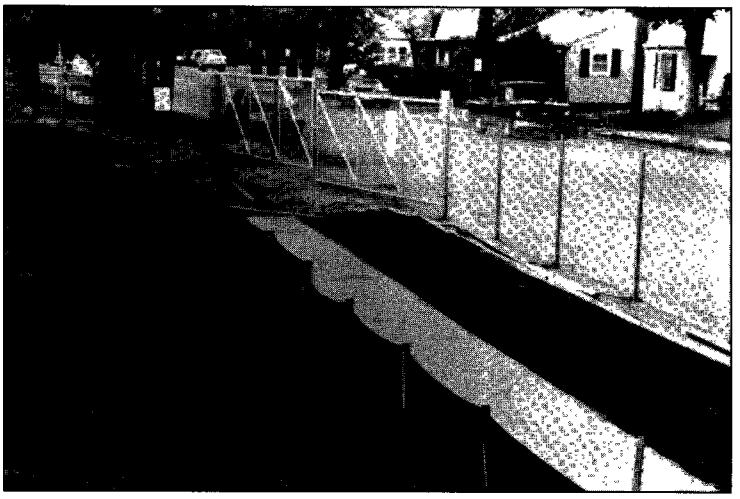
EPA has removed electroplating wastes and demolished contaminated structures. Excavated soil has been replaced with clean fill and seeded for grass. The site is now open to the public.

An automated pumping facility and a discharge pipe that carries polluted ground water from the site to the public wastewater treatment plant has been constructed. The ground water cleanup is expected to be completed in early 1994.

U.S. Environmental Protection Agency
Region 5, Library (PL-12J)
77 West Jackson Boulevard, 12th Floor
Chicago, IL 60604-3590

A Site Snapshot

The Tri-State Plating site covers approximately one acre in the heart of a residential neighborhood in Columbus, Indiana. The closest home rests on the border of the site property. A municipal well field that supplies drinking water to many of Columbus' 30,000 residents lies just 800 feet away. Haw Creek, which flows through the city, is two blocks from the site.

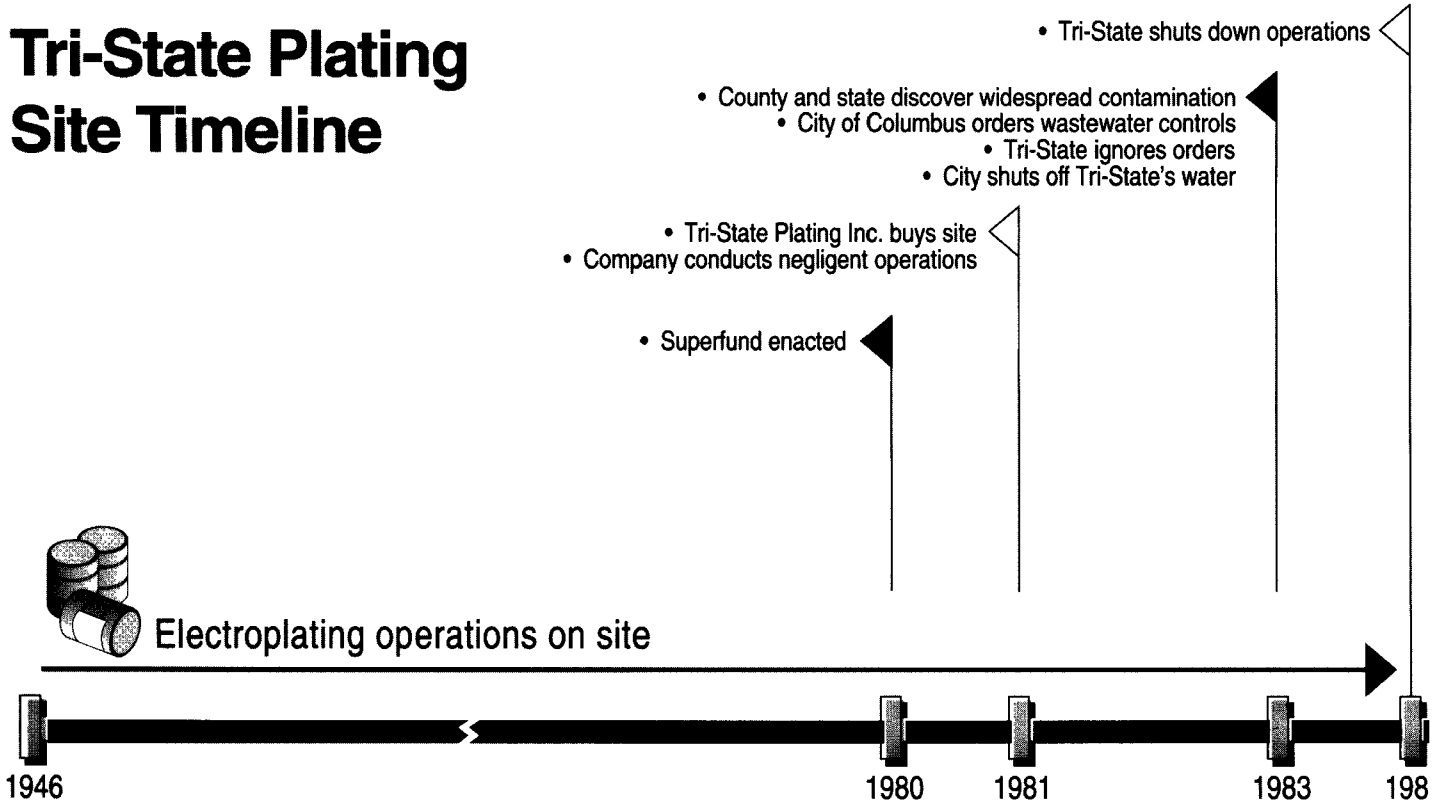


In 1946, two companies, Hull Industries and Quality Plating Service, began electroplating operations at the site. In 1981, Tri-State Plating, Inc. bought the facility and continued operations. The company's improper disposal and handling of electroplating chemicals and wastes resulted in extensive contamination of the facility and surrounding area.

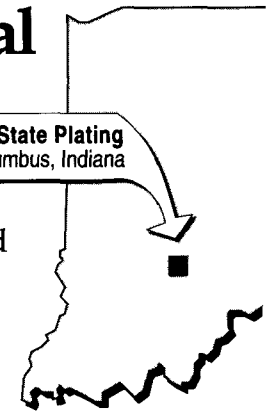
The soil and process buildings were laden with cyanide, acids, and heavy metals including cadmium, chromium, copper, lead, nickel, and arsenic. The ground water in the area was contaminated with chromium, threatening the City of Columbus' water supply through the municipal well field.

Without EPA cleanup, direct contact with contaminated soil or accidental consumption of untreated ground water could have lead to kidney problems, high blood pressure, anemia, ulcers or lung, kidney, and prostate cancer.

Tri-State Plating Site Timeline



EPA's Cleanup Eliminates 40 Years of Illegal and Improper Waste Disposal



Illegal Dumping, Discharging Causes Contamination

Tri-State Plating conducted operations until 1984. Company workers apparently dumped waste products from the electroplating process directly onto the ground at the site; barrels of chemical wastes and debris began to pile up. In addition, the company illegally discharged effluent into the city sewers, causing the shutdown of the municipal treatment plant.

Congress enacted the Superfund law in 1980, allocating federal dollars for the cleanup of the nation's abandoned or uncontrolled hazardous waste sites. Heightened awareness of the dangers of hazardous wastes caused local officials to take a closer look at this residential facility. Tri-State's highly visible location and its illegal discharges into the city sewers warranted immediate attention.

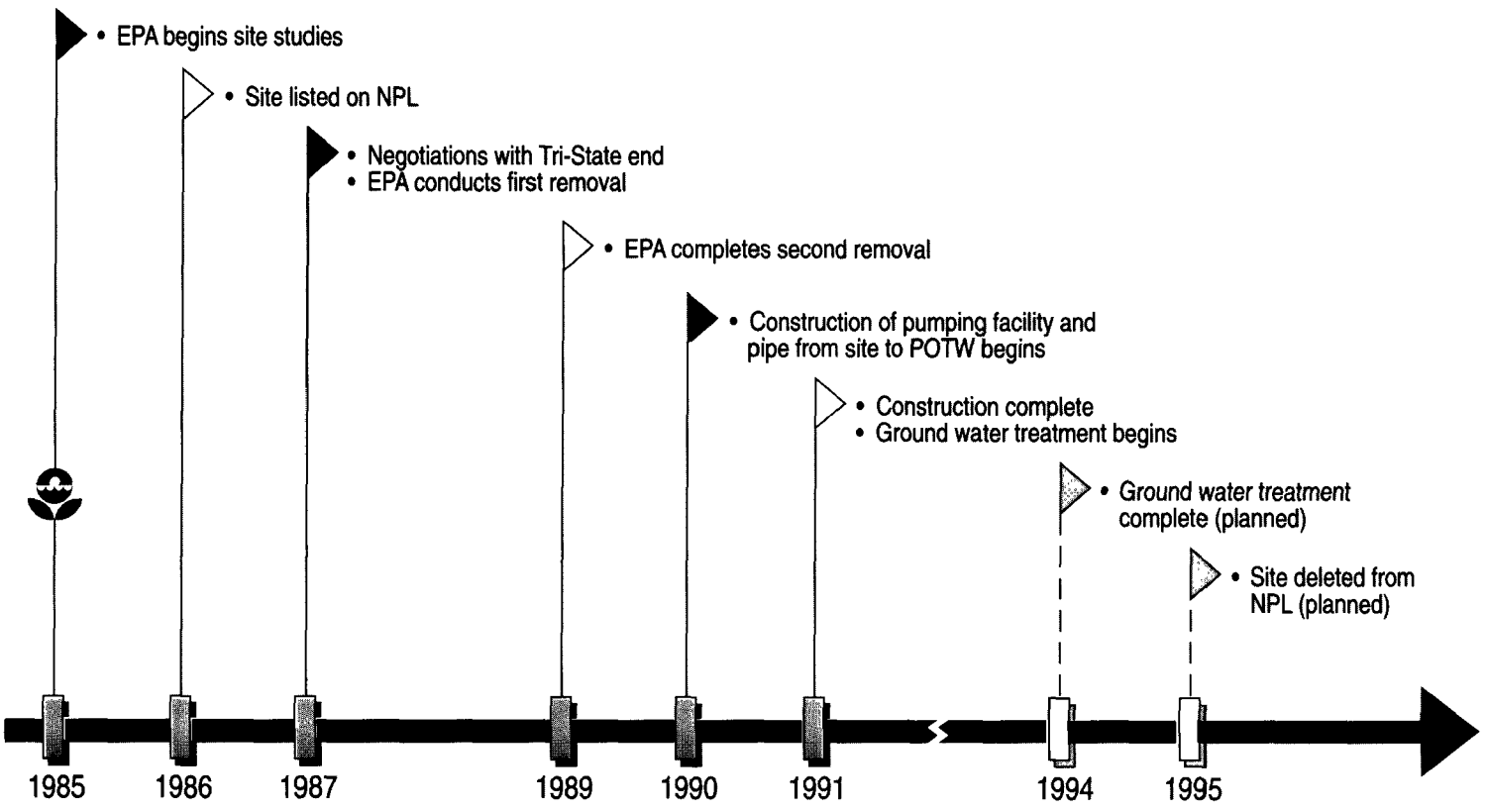
Site inspections revealed the soil was contaminated with cyanide and heavy metals

In 1983, the City of Columbus, Bartholomew County Health Department, and the Indiana State Board of Health (ISBH) inspected the site. Their preliminary inspections revealed soil contaminated by cyanide and heavy metals.

The city ordered Tri-State to install a wastewater treatment system. The company ignored the city's demands, and so Tri-State's sewer lines and water supply were cut off. Two months later, Tri-State closed down operations.

Local Officials Call in Reinforcements

In 1984, local officials investigated reports of an alarming number of birds dying in the area. The birds were poisoned by drinking from contaminated puddles.



State and local officials determined that the chemicals had spread through the soil and into the ground water, potentially threatening the drinking water of thousands of Columbus residents. Local officials turned to EPA for assistance in the early months of 1985.

EPA quickly conducted preliminary tests of the site, confirming the original assessment by the County and ISBH. In 1986, EPA included the site on the National Priorities List (NPL). Sites on the NPL are eligible for federal funding, however EPA's policy is to compel responsible parties to clean up hazardous waste sites. EPA then initiated a search to identify owners and operators of the Tri-State site.

Local officials turned to EPA for assistance

Eliminating the Source Reduces Immediate Concerns

EPA's search revealed that Tri-State Plating, Inc. was primarily responsible for polluting the site. In April 1987, EPA entered into negotiations with Tri-State to perform studies of the site contamination. These negotiations ended unsuccessfully less than two weeks later, and so EPA began preliminary site investigations.

Realizing that the site contaminants posed an immediate threat, an EPA emergency response team removed 27 leaking drums containing electroplating waste to a licensed hazardous waste facility. EPA also erected a fence around the site to prevent public access.

The team then completely emptied the main building that housed the electroplating operations and the storage shed behind it. Contaminated soil around the building was excavated to a depth of four feet, and around the rest of the site to a depth of one foot, and replaced with clean fill.

An EPA emergency response team removed 27 leaking drums

These emergency actions were completed in just three months during the summer and early fall of 1987.

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Decontamination at Tri-State Plating: the main processing building was decontaminated and its foundation excavated. Walls were blasted with abrasives, then residues removed by high-power vacuum.

Cleanup Efficiency Reduces Future Expenditures

EPA's studies showed that the removal operations had reduced the ground water contamination low enough to be treated in the city's Publicly Owned Treatment Works (POTW). POTWs are standard wastewater treatment facilities for domestic wastewater.

Using the POTW to treat the contaminated ground water reduced the cost of the ground water cleanup by $700,000 and eliminated the time it would have taken to build an on-site treatment facility. EPA used a well constructed to test the ground water to extract the contaminated water for treatment by the POTW. All that was needed was pumping equipment and a pipe from the site to the treatment plant.

Construction began in September 1990 and was completed in March 1991, at which time treatment began. EPA estimates that the ground water will be cleaned up by 1994, at least five years ahead of the original schedule.

EPA's Cleanup Allows Future Use of Site

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Although these actions eliminated the threat of direct contact with hazardous wastes, the abandoned structures remained a source of contamination to ground water. EPA's studies had indicated that the City of Columbus' drinking water was not affected by the hazardous wastes at the site. However, the contaminated ground water presented a threat to future residents who may want to drill wells in the area. The contaminated ground water also was discharging into Haw Creek, posing ecological threats to the creek and local wildife.

Studies indicated that the city's drinking water was not affected

Completing the Effort

In 1989, the EPA team performed a second removal. Workers dismantled and disposed of the main process building and storage shed, excavated the foundation of the building and the underlying contaminated soil, and hauled an additional 2,400 cubic yards of contaminated soil to an approved landfill in Peoria, Illinois. The soil was replaced with clean fill and seeded for grass. The site was then considered safe and the surrounding fence was removed.

EPA plans to delete the site from the NPL in 1995. The City of Columbus will evaluate potential new uses for this property.

Answering Community Concerns

EPA stresses the importance of working closely with the community to share information about the site's progress and to provide various opportunities for addressing concerns and questions. Because the Tri-State Plating site was located in the heart of a residential area, the public was deeply concerned.

EPA held open meetings to answer specific questions and published regular site fact sheets. EPA also set up a public education program to inform residents about the site contaminants and their environmental effects.

In addition, EPA altered the cleanup routine to avoid unnecessary disruptions to local residents. Trucks that were used to haul the building debris and contaminated soil waited in a city parking lot until the cleanup team radioed them in for loading. This kept the neighborhood streets clear during most days.

A recent example which demonstrates the importance EPA places on addressing community concerns occurred in 1992. Appraisers had refused to evaluate properties in the area because of their proximity to the site. Local banks began to refuse loans to homeowners and businesses as well. Members of the community brought this to EPA's attention.

In response, EPA held a public meeting with the Federal Housing Authority, bankers, appraisers, and community members to discuss liability issues and property values surrounding the Tri-State site. As a result of this meeting, loans are again being issued.

Success at Tri-State Plating

EPA's cleanup actions at the site eliminated direct exposure and the most serious sources of contamination at the site. In addition, polluted ground water is being treated by the municipal sewage plant, eliminating the need to construct an on-site treatment system.

EPA worked with community members to ensure that concerns and questions were addressed, and that site cleanup actions lead to improved property values in the surrounding community.

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