



# Adaptive Enforcement Secures Long-Term Stewardship in Sheffield, Illinois

## The Value of Environmental Enforcement

At the US Ecology, Inc. site (the Site) in Sheffield, Illinois, the U.S. Environmental Protection Agency's (EPA's) enforcement mechanisms forged a new path to protecting human and environmental health through long-term stewardship. EPA determined that the Site needed an enforceable strategy to ensure continued long-term monitoring and maintenance activities as well as additional cleanup work, if needed. This case study highlights how strong collaboration among EPA's Resource Conservation and Recovery Act (RCRA) program, Illinois EPA and the site owner, US Ecology, resulted in updating one of the oldest RCRA corrective action orders to better protect human health and the environment at the Site.

## Site and Community Profile

From 1967 to 1983, US Ecology operated a 46-acre permitted hazardous waste disposal facility in a rural part of Sheffield, Illinois. The facility included two RCRA hazardous waste disposal areas: the 6-acre Old Chem site and the 40-acre New Chem site (the landfills). These two landfills make up the US Ecology site.

The Site's landfills contain about 165,000 cubic yards of industrial, laboratory and agricultural hazardous wastes. A state-permitted industrial waste landfill

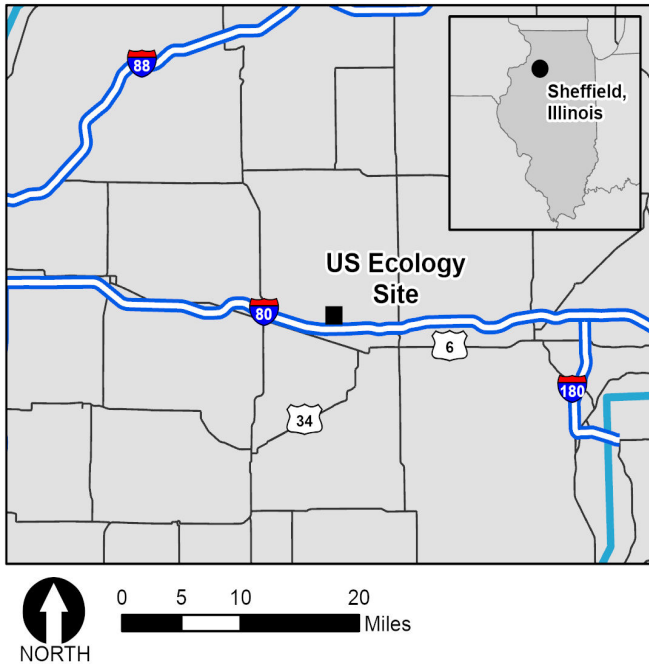
## Environmental Enforcement Benefits the Community

EPA works to provide strong, effective enforcement support to all communities. As the Agency implements environmental and public health improvements across the country, EPA is looking for new ways to assist communities in environmentally overburdened, underserved and economically distressed areas where the needs are greatest.

## Innovative Enforcement Actions Set Precedent for Long-Term Stewardship

As part of a new approach that extended long-term stewardship beyond initial settlement agreement obligations, EPA and the Site owner entered into a second Administrative Order on Consent which provides EPA with an enforceable mechanism to ensure the continued long-term protection of human and environmental health.

operated at the Old Chem site from 1967 to 1974. Because it operated before RCRA was signed into law, it was never a RCRA-permitted facility. A state-permitted industrial waste landfill operated at the New Chem site from 1974 to 1983. In 1982, Illinois EPA issued an initial RCRA permit (Part A) for the facility, but US Ecology never pursued the second part of the RCRA permit application (Part B).



Sources: Esri, DeLorme, AND, Tele Atlas, First American, UNEP-WCMC and USGS.

The US Ecology site is located in Sheffield, Illinois.

In 1976, Illinois EPA required US Ecology to extend a barrier wall around the landfills. In 1982, sampling found groundwater contaminated with volatile organic compounds (VOCs). US Ecology put in a leachate collection system. In 1983, all landfill disposal activities ended. US Ecology placed a soil cover over both landfill areas. Deed restrictions, filed in 1981 and updated in 1995, restricted land and groundwater use, and extraction of any resources on the facility property. Security fencing surrounds the entire US Ecology property.

## Project History

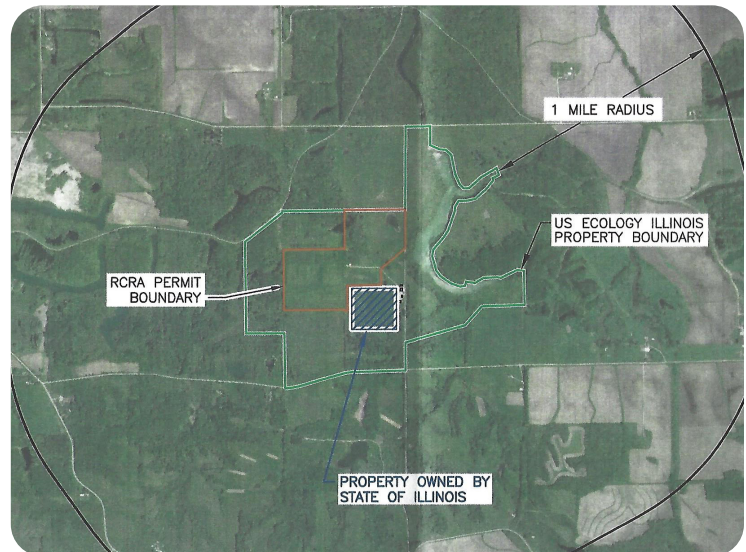
### 1985-1995

#### Site Investigations and Cleanup Actions

In September 1985, US Ecology entered into a

RCRA Administrative Order on Consent with EPA. The agreement included requirements for remedial investigations and feasibility studies to address ways that humans could be exposed to contamination as well as potential corrective actions. It was one of the earliest RCRA corrective action orders in the country. It emphasized immediate corrective actions to mitigate imminent risks to human health and the environment at the Site.

In 1990, US Ecology completed the investigations and EPA issued a Proposed Plan for cleanup. The plan identified preferred alternatives for source control/isolation and groundwater remediation. Corrective actions included source control through construction of subsurface barrier walls to direct groundwater away from waste and capping of the landfill surface.



An aerial view of the US Ecology property. The RCRA facility is outlined in red. The shaded box includes the low-level radioactive waste disposal site managed by the state of Illinois.

A groundwater extraction and treatment system addressed a contaminated groundwater plume in the shallow aquifer beneath the facility. Treated groundwater was then discharged to the local wastewater treatment plant. Further groundwater cleanup work, including in-place air sparging with soil vapor extraction and enhanced reductive dichlorination, optimized remedy performance and addressed contamination hotspots.

US Ecology completed construction of all corrective actions by 1995. The facility remains permitted and is monitored by the state's RCRA program.



## 1996 – 2019

### **Post-Closure Monitoring and Maintenance**

US Ecology completed all closure obligations under its state permit during the 1990s. In 2008, US Ecology applied for a post-closure permit with the state. In 2009, US Ecology, EPA and Illinois EPA agreed that future post-closure activities would require a monitoring program. In 2010, Illinois EPA issued the post-closure permit which included a post-closure groundwater and surface water monitoring program.

In 2019, US Ecology approached EPA and the state about the overlap between their respective oversight roles at the Site to see whether a streamlined process could help US Ecology meet its obligations. EPA reviewed the 1985 agreement. EPA determined that all obligations under that agreement were fulfilled. However, the agreement was focused on short-term corrective actions without consideration of long-term measures for an area where waste would remain in place indefinitely.

EPA took this opportunity to update the settlement agreement, to acknowledge completion of the 1985 settlement agreement's requirements, to document the Site's status and long-term monitoring and maintenance requirements, and to provide a flexible long-term stewardship plan.

## 2019 – Present

### **Forging a Renewed Commitment to Long-Term Remedy Protectiveness**

In 2019, EPA requested a Conceptual Site

## Administrative Orders on Consent

*An enforceable agreement under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, also known as Superfund) or RCRA, signed by EPA and parties, where the parties agree to perform and/or pay for some or all site cleanup activities.*

Model (CSM) for the US Ecology facility to help inform discussions among EPA, the state and the company to develop a settlement agreement for a long-term stewardship plan for the facility. The CSM can be updated and refined as new information becomes available.

In September 2020, EPA and US Ecology agreed to a new RCRA settlement agreement to confirm and enforce long-term stewardship activities at the facility. The agreement includes detailed information on maintenance and monitoring requirements, routine five-year reviews of the remedy, institutional control certification, contingency plans and financial assurance. The 2020 settlement agreement provides EPA with an enforceable mechanism to ensure the long-term protection of human health and the environment at a facility where hazardous waste remains in place as part of the cleanup plan. The settlement agreement also ensures

## RCRA Overview

Congress enacted RCRA in 1976. RCRA protects human health and the environment in two ways.

- 1. Prevention:** Preventing future environmental problems resulting from waste.
- 2. Corrective action:** Cleaning up current contamination at facilities caused by the mismanagement or release of hazardous waste.

RCRA addresses the huge volumes of municipal and industrial waste generated by facilities, including hazardous waste that is generated and disposed of by owners and operators. Under RCRA, owners and operators who contaminate land, water and air are liable for cleaning up the contamination. RCRA corrective action usually takes place at facilities that treat, store or dispose of hazardous waste and can also take place while a facility continues to operate. Corrective action can be required through a RCRA permit, a voluntary agreement, an administrative order or judicial action.

proper oversight while eliminating duplication of obligations between the federal settlement agreement and the state permit, which remains in effect but defers to the 2020 settlement agreement.

The activities at the Site, including the recent settlement agreement, are remarkable. The Site is the first site in the country to approach the end of its 30-year monitoring obligations under a state post-closure permit and have all other RCRA obligations for corrective action completed. The innovative approach at the Site – including an enforceable mechanism to ensure long-term stewardship and the integration of documentation that will be updated as new information becomes available to provide flexibility to respond to unforeseen circumstances – sets a new bar and example for other sites with 30-year monitoring obligations that are coming to a close.

## Enforcement Makes a Difference

EPA's environmental enforcement program has helped make a difference in thousands of communities impacted by hazardous waste. At sites such as the US Ecology, Inc. site, the flexibility under RCRA has allowed for streamlined compliance with federal and state post-closure

requirements, as well as set the stage for adaptive approaches to securing long-term stewardship for sites with concluding 30-year monitoring obligations. This approach achieves shared objectives, such as ensuring the long-term protection of human health and the environment and providing enforcement mechanisms to adapt to future site conditions and circumstances. These efforts have set a precedent for other sites and forged a strong long-term partnership among EPA, Illinois EPA and site owner US Ecology.

### Building on Success to Keep Enforcement Mechanisms Fresh

In addition to the collaboration between the federal and state agencies and US Ecology to develop a new, modernized settlement agreement, it also provided an opportunity to revisit institutional controls for the Site. The agencies and the company are also pursuing revisions to the administrative order on consent to ensure it complies with state standards, as well as the 2020 settlement agreement's post-closure and long-term stewardship obligations.

### For more information on the seven sustainability principles:

[www.epa.gov/enforcement/incorporating-sustainability-principles-cercla-and-rcra-cleanup-enforcement-actions](https://www.epa.gov/enforcement/incorporating-sustainability-principles-cercla-and-rcra-cleanup-enforcement-actions)

### For more information on contamination investigation efforts, please contact

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