



Project

Superfund Site Unimatic Operable Unit 2, Fairfield, NJ. EPA Region 2

Application

Site remediation

Scope

Excavation and off-site disposal of soil contaminated with poly-chlorinated biphenyls (PCBs) and pesticides.

Equipment and services

6x Aeroqual AQS 1 monitors
Aeroqual OneView software
PM₁₀, PM_{2.5}, VOCs, Wind, Noise



Regulations

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
EPA/USACE/Site Specific Perimeter Air Monitoring Plan

Client

US Army Corps of Engineers (USACE)

Consultant

Partner Engineering and Science

Contractor

Conti Federal Services

Equipment Provider

Pine Environmental

Date

2024 - 2025

PCB-contaminated wetland restored

Partner Engineering and Science, Inc. (ESI) deployed Aeroqual's air monitoring system during restoration of a contaminated wetland located downstream from the former Unimatic Manufacturing Site in Fairfield, NJ.

In 2014, the EPA included the site in the Superfund National Priorities List, and the site is undergoing wetland restoration to support long-term ecological recovery.

Project challenges

From 1955 to 2001, Unimatic operated a die casting facility that melted aluminum alloy in natural gas kilns and injected it into molds under high pressure. The molds were coated with PCB-containing lubricating oil to prevent sticking. PCB-contaminated process and cooling water leaked from wastewater pipes, discharging at the property's northeast corner. This discharge contaminated soil and groundwater within an off-site wooded wetland downstream of the facility. The contaminated site is an area of ecological interest, containing endangered species, and is located close to residential areas.

PCBs can harm the immune, reproductive and nervous systems and are potentially carcinogenic, so monitoring and controlling fugitive dust and vapor emissions played a vital role in the cleanup process. Partner ESI installed six Aeroqual AQS 1 stations at four perimeter locations to monitor upwind and downwind particulate and VOC levels in real time. Aeroqual OneView, Aeroqual's remediation air monitoring software, generated automatic daily reports to aid regulatory compliance. Real-time alerts helped to initiate mitigation responses in the event of fugitive emissions rising above safe levels.

Project outcome

Using Aeroqual's solution, Partner ESI cost-effectively complied with the applicable regulations and met the project's environmental objectives. Sensitive receptors were protected from exposure to harmful PCBs and pesticides, and the wetland ecosystem will soon be fully restored.

"The Aeroqual equipment made for seamless perimeter air monitoring with real-time alerting and automatic upwind versus downwind data reporting. We also saved time with setup and troubleshooting."

Ally Hassler

Project Manager - Environmental Solutions Group, Partner ESI