



Geosyntec developed a focused remedy approach geared to position this high-value property immediately across the Hudson River from Manhattan for redevelopment.

Client: Honeywell International

Services Provided:

- ☑ CERCLA Removal Site Investigation (RSI)
- ☑ CERCLA Engineering Evaluation/Cost Analysis
- ☑ Feasibility Study
- ☑ River sediment sampling and assessment
- ☑ Remedial Design

Project Objective

The Quanta Resources Site is located in a former industrialized parcel directly across the Hudson River from Manhattan. The site was used for coal tar storage from the 1930s until 1974, followed by the reprocessing of waste oil. The site previously contained over 60 aboveground storage tanks and 10 underground storage tanks having a total storage capacity of more than nine million gallons. During the years of plant operations, coal tar was off-loaded from barges docked at the site. The upland areas as well as the river sediment adjacent to the site contain a variety of contaminants including polycyclic aromatic hydrocarbons (PAHs), arsenic, chromium, and lead. A plume of coal tar creosote exists beneath the site that extends into the Hudson River, creating an oil sheen on the river adjacent to the site.

The site was added to the National Priorities, or Superfund, List in September of 2002. The client retained Geosyntec to perform site investigation, feasibility study, and remedial design services to control the oil sheen and meet the overall requirements of U.S. EPA Region 2.

Geosyntec's Scope of Services

Geosyntec began by conducting a Removal Site Investigation (RSI) and Engineering Evaluation/Cost Analysis (EE/CA) pursuant to a CERCLA Removal Response Action Ordered by U.S. EPA Region 2. We performed the RSI to delineate both upland and sediment source areas. During work plan development and negotiation with the EPA, we employed an interactive, GIS-driven presentation to garner same-day concurrence from EPA on our investigative approach. Geosyntec employed innovative rapid assessment techniques to delineate the configuration and extent of dense non-aqueous phase liquids (DNAPL) in the subsurface soils and river sediments. These techniques included sediment core sampling using a vacuum coring device developed by Geosyntec, and a barge-mounted Cone Penetration Testing (CPT) device fitted with a Rapid Optical Screening Tool (ROST™). These technologies enabled Geosyntec to identify in real-time a continuous profile of hydrocarbon DNAPL during the sampling program. The CPT also enabled us to measure geotechnical properties of the sediment to support engineering evaluations and design.

The remedial technologies that Geosyntec considered for the site included excavation, capping, sheet-pile wall containment, interceptor trench, free-product removal, enhanced recovery, and solidification/fixation. A mechanistic model of coal tar migration, considering both physical and chemical processes, identified the influence of DNAPL migration from the uplands to the sediments.

Based upon this model, we focused our initial remedial alternatives on isolating the uplands from the river sediments. Broader questions of contaminant fate and transport were deferred to the upcoming Remedial Investigation/Feasibility Study (RI/FS) to focus Honeywell's efforts on a rapid, redevelopment-focused interim action. A DNAPL collection trench was selected as an interim remedy to control hydrocarbon migration to the Hudson River; this approach was deemed a cost-effective and readily implementable remedy appropriate for the purposes of the CERCLA Removal Action. Once the initial remedial action is completed, the impacts of coal tar within the sediments will be assessed to determine the need for subsequent remedial action.

Notable Accomplishments

Geosyntec developed a comprehensive Conceptual Site Model (CSM) for this complex former coal tar site that was in need of an expeditious remedy to control visible, ongoing impacts to the Hudson River. Through the use of rapid, cost-effective characterization tools and the development of a focused remedy to control the most significant contamination source, Geosyntec provided a streamlined removal response program geared to position the high-value property for redevelopment.