

ENHANCED PUMP AND TREAT

FORMER CHEMICAL MANUFACTURING PLANT

Case History, No. 43

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Problem

In Linden, New Jersey, a 126 acre, decommissioned chemical manufacturing site had contamination remaining in the soil and groundwater. The feasibility study showed that, due to the magnitude of the site, remediation costs associated with various technologies were prohibitive. However, the site owner and state regulators worked together to develop a remediation plan that was economically feasible and met all the performance requirements. The decision was made to use a barrier to contain the contamination along the property line, then install a pump and treat system up gradient of the barrier to collect the contaminated groundwater and treat it in the on-site plant. One of the performance criteria for the barrier was a performance guarantee.



Figure 1: Installation of Custom Bent Sheet



Figure 2: 60-inch Penetration

Solution

The Waterloo Barrier[®] containment system was selected because of its low permeability (10^{-7} cm/s) and the warranty associated with it. In addition, the barrier was much less expensive than other remediation options. The barrier was installed along the boundary in order to encompass the entire property. To conform to the irregular property line, 17 custom-bent corner sheet piles were employed to follow the desired layout (see Figure 1). There were 9 penetrations through the barrier to accommodate existing and future services at various locations, with diameters varying from 8" to 60" (see Figure 2). Several temporary road crossings were built over the barrier during construction to allow uninterrupted emergency access to the site. Over 4,000 Waterloo Barrier[®]



Figure 3: Barrier Through Former Plant

sheet piles and 70,000 lineal feet of sealable cavity were installed on the site. A groundwater collection system was constructed directly adjacent to the barrier to deliver groundwater to the on-site water treatment system, then the barrier was sealed using WBS-301 sealant, because of its resistance to degradation. Upon completion of the project, the site was prepared for redevelopment by the owner. This is the largest installation of Waterloo Barrier[®] to date by C3 Environmental Limited.



Figure 4: Barrier Along Property Boundary

SITE SUMMARY

Barrier: 147,000 square feet of Waterloo Barrier[®] WEZ95
Depth: Between 12 & 28 feet below grade

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