



PROJECT:

3Thirty3

LOCATION:

New Rochelle, NY

DEVELOPER:

Cappelli

SERVICES:

Geotechnical

Environmental

PROJECT SUMMARY:

A New Rochelle, New York, asphalt parking lot was remediated to Track 1 unrestricted use ahead of its development into a transit-oriented multi-story residential apartment building with ground floor retail space(s) and a subgrade ventilated parking garage beneath the first floor of the building.

The Site was occupied by metal plating company whose processes resulted in chlorinated volatile organic compound (CVOC) discharges in the ground. The geology consists of historic fill layer underlain with 1-2 feet of weathered rock, underlain with hard gneiss bedrock.

The groundwater investigation detected dense non-aqueous phase liquids (DNAPL) consisting of chlorinated solvents (mainly 1,1,1-trichloroethane) in bedrock. Ambient Water Quality Standards (AWQS) were exceeded mainly for volatile organic compounds (VOCs) including 1,1,1-TCA and metals such as chromium and nickel. Emerging contaminants perfluorooctanoic acid (PFOA) and PFOS were also detected exceeding the New York State Department of Environmental Conservation (NYSDEC) maximum contaminant level.

SESI conducted an extensive rock characterization program including several rock cores and downhole geophysics at ten (10) locations of the impacted area, which is 100x100 feet. The rock fracture zones were mapped in a Site conceptual model in order to determine the main DNAPL locations within the rock. The identified contaminated fractures were targeted with monitoring wells and approximately forty (40) injection wells.

Groundwater CVOC treatment consisted of injecting activated persulfate chemical oxidants into the bedrock fractures to reduce source area DNAPL. This treatment resulted in >90% decrease of CVOCs in the source area. SESI also placed an activated carbon barrier to prevent off-site migration of VOCs and PFAS to the adjacent property. As a result, a certificate of completion was obtained from NYSDEC for the site in December 2022.

The residual groundwater CVOC and metals contamination is being addressed through an ongoing treatment program consisting of in-situ chemical reduction using zero-valent iron. This long-term treatment of residual CVOC contamination is being implemented through a site management plan.

