Insitu Chemical Oxidation Treatment at Former Bus Depot

Site Information

Former Bus Depot and Maintenance Facility
New York, NY

Client Information

New York City Transit Authority

Project Highlights

- Contamination consisted of diesel fuel in the adsorbed phase in both vadose and staturated zones, and liquid and dissolved phases in groundwater.
- Over 120 injection points at select locations throughout the impacted area.
- Installed 200 linear foot hydraulic barrier to bedrock to prevent the chemical migration beneath the existing building.
- Health and Safety oversight including both community and work zone air monitoring and proper storage and handling of chemicals.

EnviroTrac is currently under contract to the New York City Transit Authority (NYCT) to perform In Situ Chemical Oxidation (ISCO) treatment of petroleum contaminated soils and groundwater at a former bus depot and maintenance facility in Manhattan. The contamination, consisting of diesel fuel exists in the adsorbed phase in both the vadose and saturated zones, and liquid and dissolved phases in groundwater. The site is located adjacent to high-rise apartments and office buildings which make excavation of soils and drilling a high risk. Additionally, the site subsurface conditions include buried structures such as concrete, steel and rail tracks.

The project is divided into three phases: bench scale testing, pilot testing, and full scale treatment. The bench scale testing included the collection of soil and groundwater samples, and laboratory evaluation to ensure that the subject site could adequately be remediated through ISCO treatment. A 1000 square foot area was selected for the pilot test in which injection points were installed at 7-feet on center. EnviroTrac oversaw the injection of a modified fentons reagent including a propriety catalyst into the injection wells to estimate a suitable Radius of Influence (ROI) for injection. For full scale treatment, over 120 injection points were installed to 15 fbg at 10-feet on center.

A 200 linear foot hydraulic barrier consisting of steel sheeting was installed to bedrock to prevent the chemical migration beneath the existing building. This barrier had to be installed with an impact hammer with continuous seismic monitoring to ensure surrounding structures would not be compromised. Other site work included exposing and capping of a four foot sewer line, and the excavation and removal of an oil water separator.

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