

# ISCO Inject & Extract Reducing LNAPL

Active Railroad Yard – Homewood, IL

## DPT Injection and Vacuum Extraction

**Project Summary:** Corrosion of an oil water separator at an operating locomotive service building resulted in the release of LNAPL into the subsurface. ORIN successfully treated soil and groundwater utilizing a combination of in-situ chemical oxidation and vacuum extraction. Nine injection points were advanced to an injection interval of 15 to 10 ft bgs using Geoprobe direct push technology with each point receiving an average of 50 gallons of treatment chemistry. Four points received an additional 25 gallons each for a total of 550 gallons.

Three nearby wells were used as extraction wells to allow for hydraulic control of groundwater to assist with the distribution of the remedial chemistry and to remove free product and highly contaminated groundwater. A VAC truck was present to vacuum extract from the extraction wells during all injection activities. Approximately 1,300 gallons was extracted during the pilot test.



## Reduction Measured Over a 72 Hour Period

### Site Conditions:

#### Contaminants –

LNAPL

2.13 ft Thickness (MW-08)

#### Impacted Matrix –

Sandy Clay,

Clayey Sand, and Sand

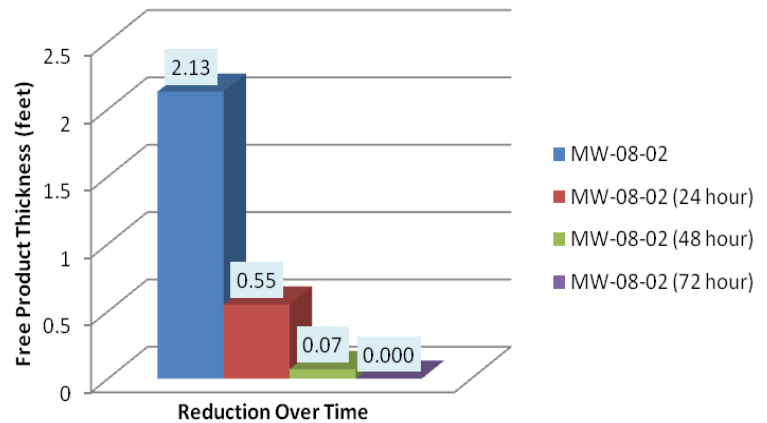
10 to 15 ft-bgs

#### Treatment Chemistry –

Sodium Persulfate and

PermeOx® Plus

### Free Product Thickness Reduction Over Time



**Project Results:** The remedial efforts dramatically reduced the thicknesses of free product in the subsurface. In MW-08-02, free product thickness was reduced from 2.13 feet to 0 feet within 72 hours after injection. The residual calcium peroxide catalyst continued to provide an oxygen source and promoted bioremediation.