

Railroad Spill Seepage LNAPL Treatment Case Study

During this railroad spill seepage BioLogix was implemented to remediate and cleanup fuel spilled at the site. Impacted soil in the spill area was excavated for off-site disposal. The fuel, however, percolated into underlying soil, migrated in the subsurface and seeped back to the surface, forming a sheen on the water of an adjacent pond.

The slope of the railroad embankment is very steep and grades downward to the pond. After the fuel began to appear on the surface water, sumps were installed near the base of the slope and perched groundwater was encountered at a few feet below the surface. The LNAPL on ground water was as much as 0.2 feet thick. The assumed area of the LNAPL was approximately 1,500 square feet.

BioLogix was applied by injecting 204 Litres of a concentrated solution into the fill in the excavation area. The solution flushed through the impacted soil following the migration path of the fuel. During remediation, the LNAPL thicknesses were measured in the sumps. After each measurement, the LNAPL was bailed from the sumps.

Following bioaugmentation with BioLogix, LNAPL thickness appeared to increase in some locations. However, 90 days after bioaugmentation, the LNAPL was no longer present in the sumps and the sheen was no longer observed on the surface water. The following table shows representative LNAPL thickness measurements (in feet).

Sampling Location	Pre-Treatment	30 Days Post Treatment	60 Days Post Treatment	90 Days Post Treatment
1	0.04	0.06	No LNAPL	No LNAPL
10	0.15	0.12	0.08	No LNAPL
11	0.13	0.08	0.07	No LNAPL
15	0.12	0.10	0.18	No LNAPL

The treatment was successful in reducing the residual environmental impact of the fuel spill. The treatment also verified the effectiveness of BioLogix for petroleum LNAPL situations.