Enhanced Bioattenuation of a Gasoline UST Release in Puerto Rico

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At a gasoline service station in Puerto Rico, a dissolved phase benzene, toluene, ethyl benzene and xylene (BTEX) plume was known to exist on site and migrate off site to an adjacent property. A full delineation of the source area was not completed however, protection of down gradient off site receptors was considered a critical issue. Given an existing nutrient source and microbial population, oxygen is often the limiting factor retarding optimal biodegredation of dissolved phase BTEX compounds in groundwater. In a pilot scale study, Oxygen Release Compound (ORC®) was delivered into groundwater at the site by high pressure slurry injection with Geoprobe® direct push equipment. Concentrations of BTEX reduced by 26 to 97% in the treated plum area within twelve weeks of installing ORC into the groundwater. As the result of an untreated source at the site, rebound of a smaller high concentration plume is observed at six months following the initial injection. However, the over all aerial extent of the plume is substantially reduced. With the further delineation and mitigation of the source area, an effective ORC treatment is developed and implemented.