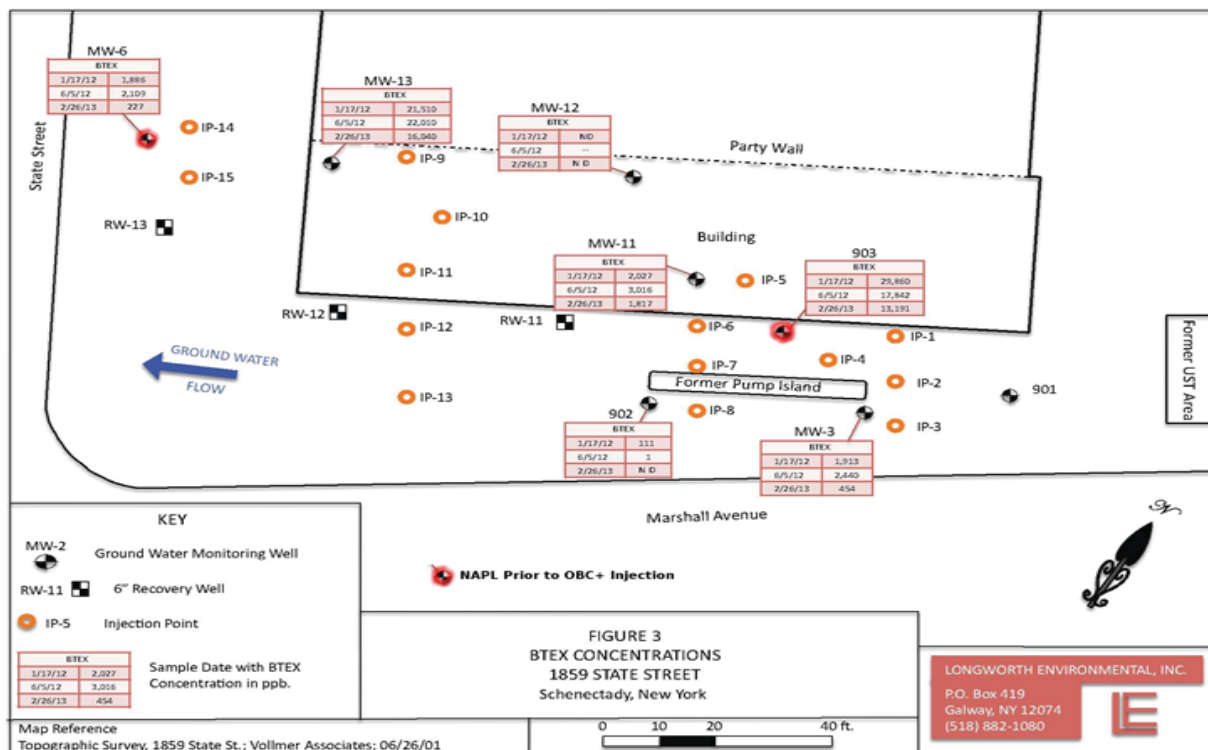




## INFORMATION

Redox Tech, LLC and Longworth Environmental collaborated on a project where Sulfate BioChem (SBC) injection successfully reduced benzene, toluene, ethylbenzene, and xylene (BTEX) at a former gas station in Schenectady, NY. The mixture in SBC supports long-term bioremediation via anaerobic oxidation under sulfate reducing conditions. SBC contains several soluble sulfur salts each with a different purpose. Magnesium sulfate (epsom salts) provides the main source of sulfate electron acceptors as well as magnesium, which is essential for cell growth and function. Other compounds in the mixture help maintain the proper conditions for anaerobic oxidation of petroleum. During anaerobic oxidation with sulfate, bacteria utilize the oxygen on the sulfate to convert petroleum to harmless carbon dioxide and water. BTEX contamination was found in wells covering approximately 0.4 acres. Non-aqueous phase liquids (NAPL) were found in three wells while three others had concentrations exceeding 10,000 ppb total BTEX. From February 2004 to March 2006, contaminants were periodically removed using a vacuum truck. In January 2007, a dual phase extraction (DPE) system was installed and operated on site until November 2009. After DPE, two of six wells still had NAPL. In October 2010, approximately 10,000 lbs of SBC was injected through 15 temporary injection points and six wells. By June 2012, no NAPL was observed in any of the monitoring wells and sulfate concentrations were less than 25 mg/L in all monitoring wells on site. As of February 2013, no NAPL has been observed in any of the monitoring wells and two of the former NAPL wells have concentrations of total BTEX less than 500 ppb. Groundwater from one well with previous concentrations as high as 14,000 ppb was non-detect. Concentrations in all of the monitoring wells have been steadily decreasing since the SBC injection. The large original plume has receded and separated to two smaller plumes centered around two wells (MW-13 and 903). Concentrations in these wells are decreasing at a rate of approximately 25% per year.

## SITE MAP





## RESULTS

Ground Water Quality Summary : August 2009 - February 2013

