

## E-REDOX<sup>®</sup> CASE STUDY: ENHANCEMENT OF *IN SITU* BENZENE DEGRADATION

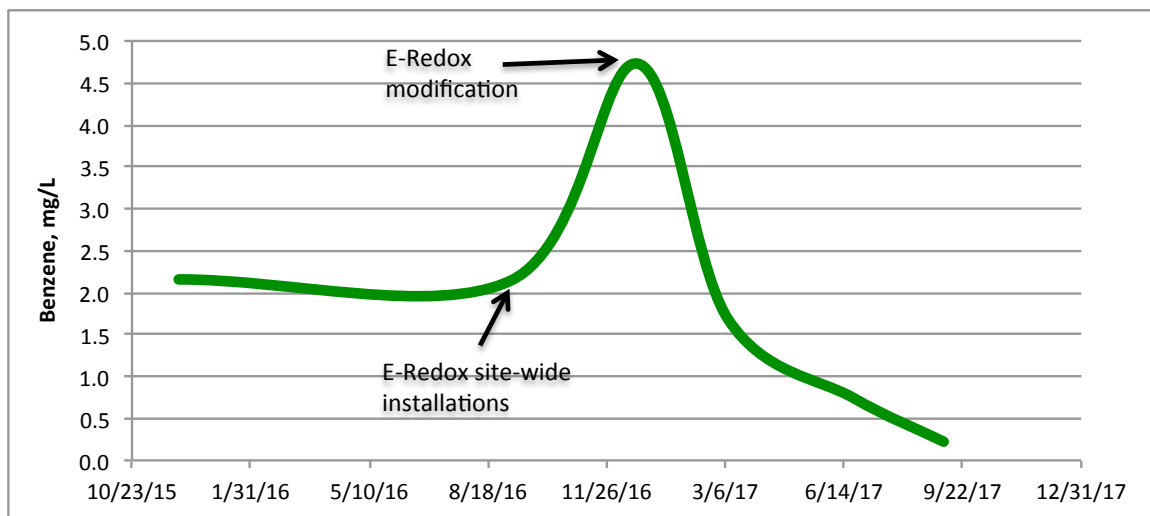
**Location:** Fuel station in Denver, CO

**Contaminated Matrix:** Groundwater and subsurface soil

**Primary Contaminants of Concern:** Benzene

**Project Objective:** Enhancement of in situ contaminant degradation by full-scale implementation of E-Redox<sup>®</sup> technology

**Case Study Description & Results:** E-Redox<sup>®</sup> units were installed in groundwater wells within the contaminant source area. The units were installed in an array with 20-ft spacing. After the installation, a site-wide event increased benzene concentrations; however, after modifications to the E-Redox<sup>®</sup> units, benzene concentrations decreased rapidly to <10% of the pre-installation levels within 9 months (see figure below). Microbial voltage generation from the E-Redox<sup>®</sup> units ranged from 20 to 150 mV, depending on contaminant and background organic carbon levels. Overall, the full-scale implementation of the E-Redox<sup>®</sup> technology has resulted in an overall reduction of groundwater benzene concentrations at the site.



**Overall benzene concentrations for the source area of a fuel station. Around November 2016 groundwater level onsite dropped significantly, corresponding to the increase of benzene level at the source area.**