

Tank Excavation and Slurry Injection MTBE Remediation in Wisconsin

| Contaminants | Application Method | Soil Type | Groundwater Velocity |
|--------------|-----------------------------|-----------|----------------------|
| MTBE, BTEX | Backfill Amend./Slurry Inj. | Clay/Silt | 0.1-0.2 ft/day |

A service station in Wisconsin was contaminated with high levels of MTBE and BTEX. Groundwater contamination was likely the result of leakage from an underground storage tank (UST) and the dispenser island. The contaminant plume covered an area of 160 feet by 200 feet, and was estimated to be approximately 13 feet thick. The aquifer materials consist of silt and clay with the groundwater depth at approximately five feet below ground surface. The groundwater flow direction is to the south at an estimated velocity of 0.1-0.2 foot per day.

Remedial options on the site were limited; ORC was selected as the best remedial alternative. A total of 2,000 pounds of ORC were installed at the site. ORC was used as a backfill amendment in the dispenser island and former UST location source areas. ORC slurry was injected via push points around the dispenser island and former UST location for the purpose of perimeter containment. Existing wells MW-1 and MW-3 were used to monitor the reduction of BTEX and MTBE. A map of the site detailing the treatment areas and monitoring well locations is presented in Figure 1. Approximately 450 days after application of ORC, MTBE was reduced by 80% and BTEX was reduced by 70% in MW-1. In MW-3, MTBE and BTEX levels decreased during the first 300 days of treatment. The increase in MTBE and BTEX in MW-3 was most likely due to the depletion of oxygen from the ORC. The degradation profiles are graphically represented in Figures 2 and 3.

Figure 1

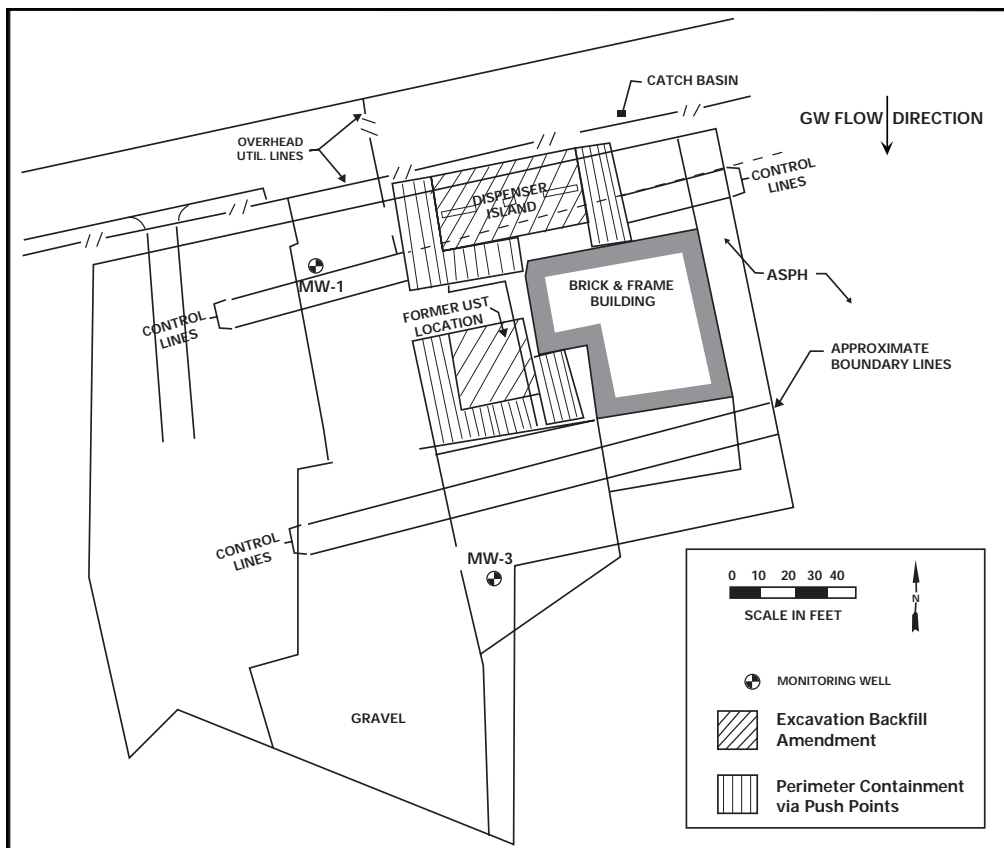


Figure 2

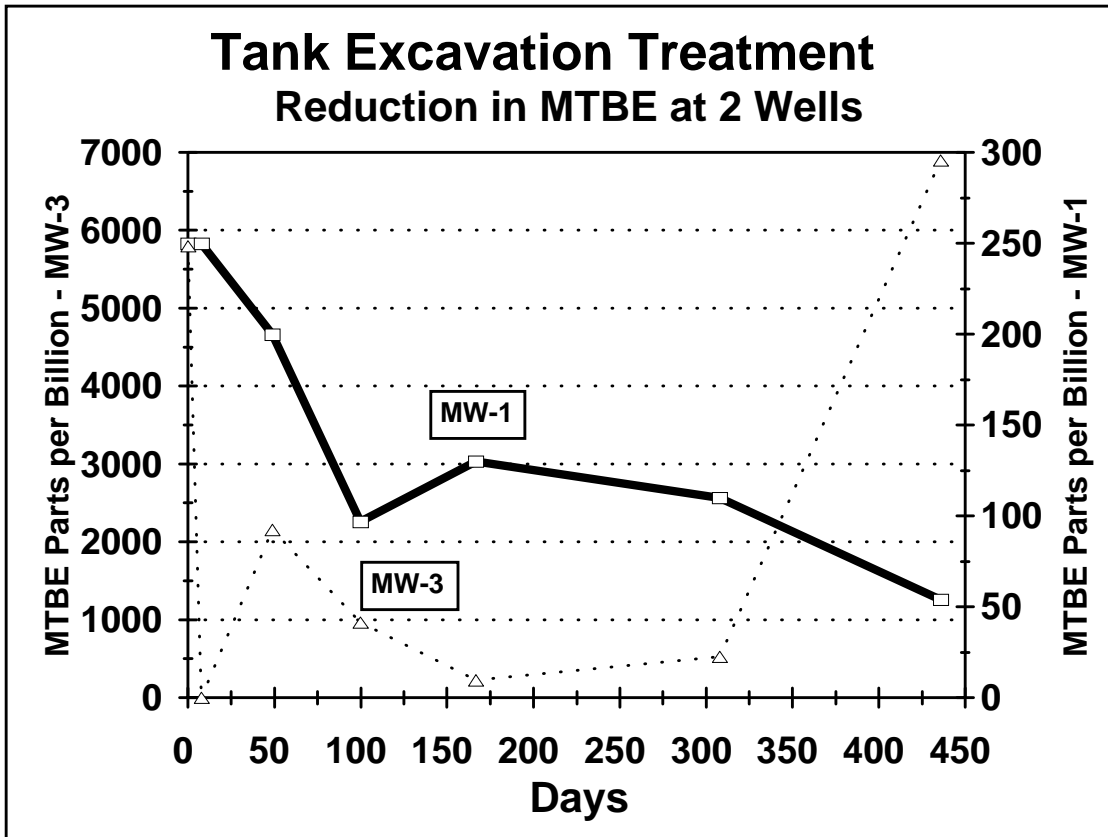


Figure 3

