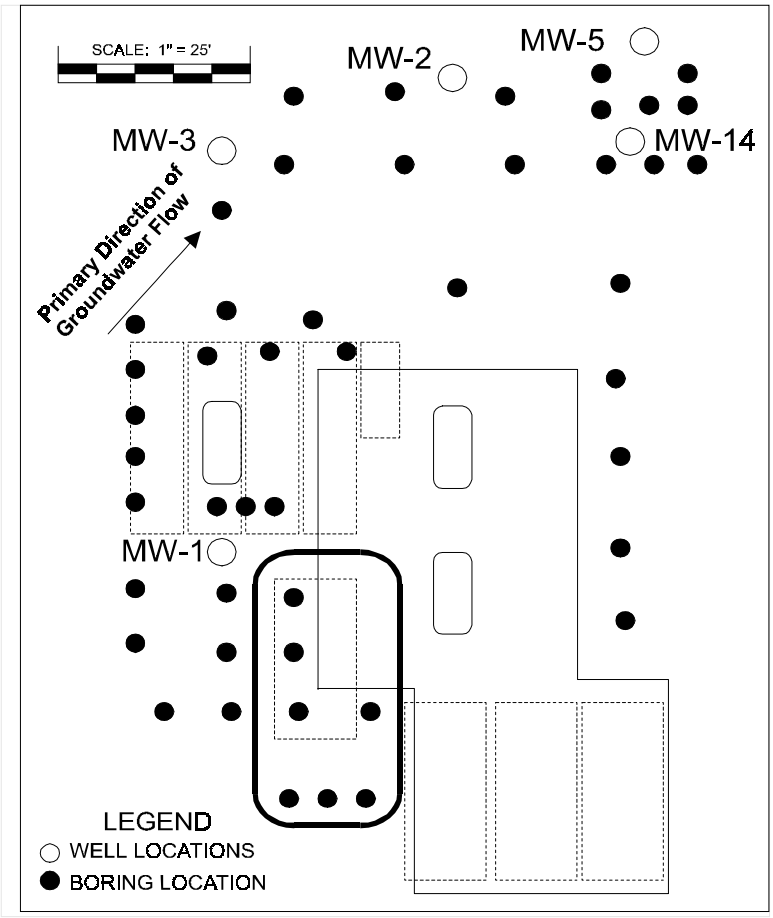
Slurry Injection BTEX Remediation in Michigan

Contaminants	Application Method	Soil Type	Groundwater Velocity
BTEX	Slurry Injection	clay	0.15 ft/day

Site Description and Remedial Design

A convenience store site impacted by a leaking UST was demolished for reconstruction, leaving a static ground water plume which needed to be addressed. The area of the plume was about 120' x 68', with a 10' thick contaminated saturated zone containing about 25 ppm BTEX. The total mass of BTEX in the system was estimated to be on the order of 46 pounds.



Regulatory authorities, recognizing the site was static with a defined mass in place, allowed for the placement of 47 bore holes which were filled with ORC slurry. The bore holes were drilled with a 5 ¼ inch hollow stem auger with a 4 inch core in the array illustrated above. The amount of oxygen placed in the system was enough to handle twice the BTEX concentration present in the plume. The site was paved for new construction immediately after the ORC was in place.

Results

In the first 200 days there was a significant reduction of benzene, toluene and ethylbenzene in the sentinel well (MW-14). Significant reduction continued to the latest sampling event at day 315. The reduction in B,T and E is presented in Figure 1 and the corresponding risk reduction calculation in Figure 2. This decrease was correlated with a rise in the microbial degrader populations as noted in Figure 3. The consulting firm was satisfied with the results such that another remediation plan is in development using the source treatment approach on a second site. The firm also featured the ORC technology and these results at a convenience store owners conference that addressed environmental concerns.

Figure 1

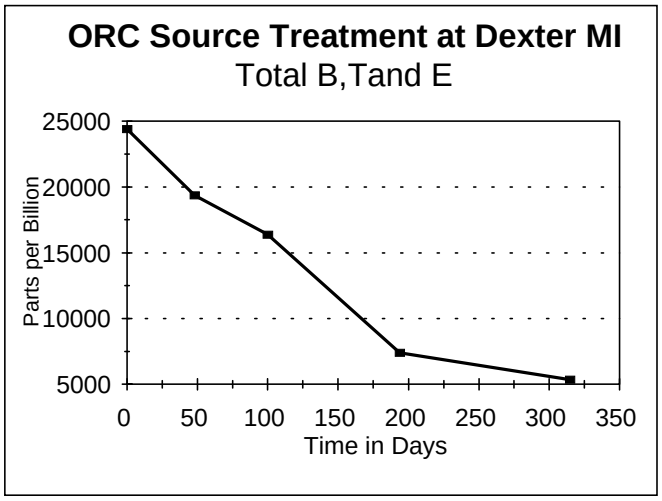


Figure 2

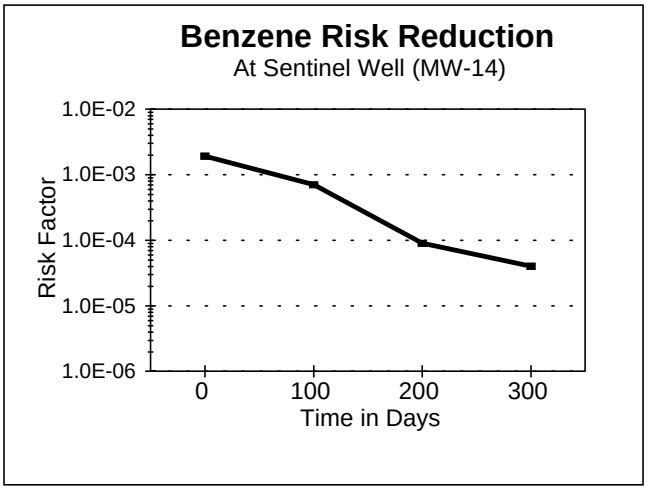
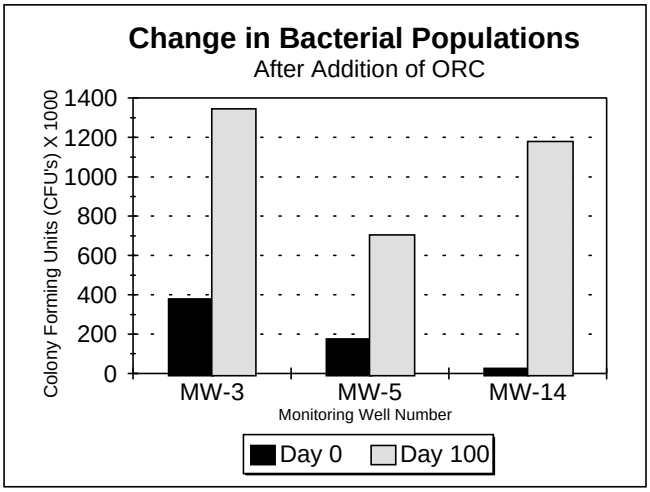


Figure 3



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