

## Oxygen Barrier BTEX Remediation in Alaska

Contaminants	Application Method	Soil Type	Groundwater Velocity
BTEX, TPH	Oxygen Barrier	Coarse Gravel	20.0 ft/day

Regenesis made its first sale of ORC to the Anchorage office of Hart-Crowser for implementation in Homer, Alaska. The site was a utility company property that had experienced significant hydrocarbon releases from tanks and pipelines. The dissolved phase hydrocarbon plume was present in a shallow water table characterized by a coarse gravel. This gave the site a very high flow characteristic - on the order of 20 feet per day during time of maximum flow. There was a dramatic reduction in flow throughout the winter freeze cycle.

The unproved nature of the technology led to the suggestion of a pilot test, and at the same time, afforded the opportunity to make a comparative study against air sparging. The primary objective was to observe the extent of oxygen dispersivity. The results of the pilot tests are described in Technical Bulletin 2.5.2. Attempts to use air sparging failed because the sparge points fouled in the high iron environment and there was evidence of channeling. The results of the ORC pilot test were impressive enough to warrant the purchase and installation of a full Oxygen Barrier.

The layout of the site and the barrier system is presented in Figure 1. Although the test was taking place during a period that included the freeze cycle, there was enough activity and measurements made during the thaw cycles on either side of the freeze to show the barrier could reduce BTEX and TPH.

In April, 1995, four months after installation, the following was recorded. At MWP-5 which is the furthest downgradient point before the road, benzene was reduced from 320 ppb to 9.8 ppb and total BTEX went from 1361 ppb to 17 ppb. The barrier was recharged with ORC in July.

Another round of data was collected in August 1995. It is believed that during the period from April through July, after the thaw, the recharge was so high that the water table rose into zones of sorbed material known to be on the site, and in particular under the warehouse building. Results of the August 1995 sampling event are shown in Figure 2. As can be seen there was a massive influx of benzene/BTEX contamination in the upgradient wells outside the treated area. There is about a 50 fold rise in background conditions, but as measurements are made through the barrier series, major reductions in benzene and BTEX are noted.

The Alaska regulators approved the ORC barrier as the most reasonable economic action to take in order to progress to the next acceptable level of contaminant control. The barrier was recharged again in December 1995.

Figure 1

# Modified Remediation System Configuration HEA Lake Street Facility Homer, Alaska

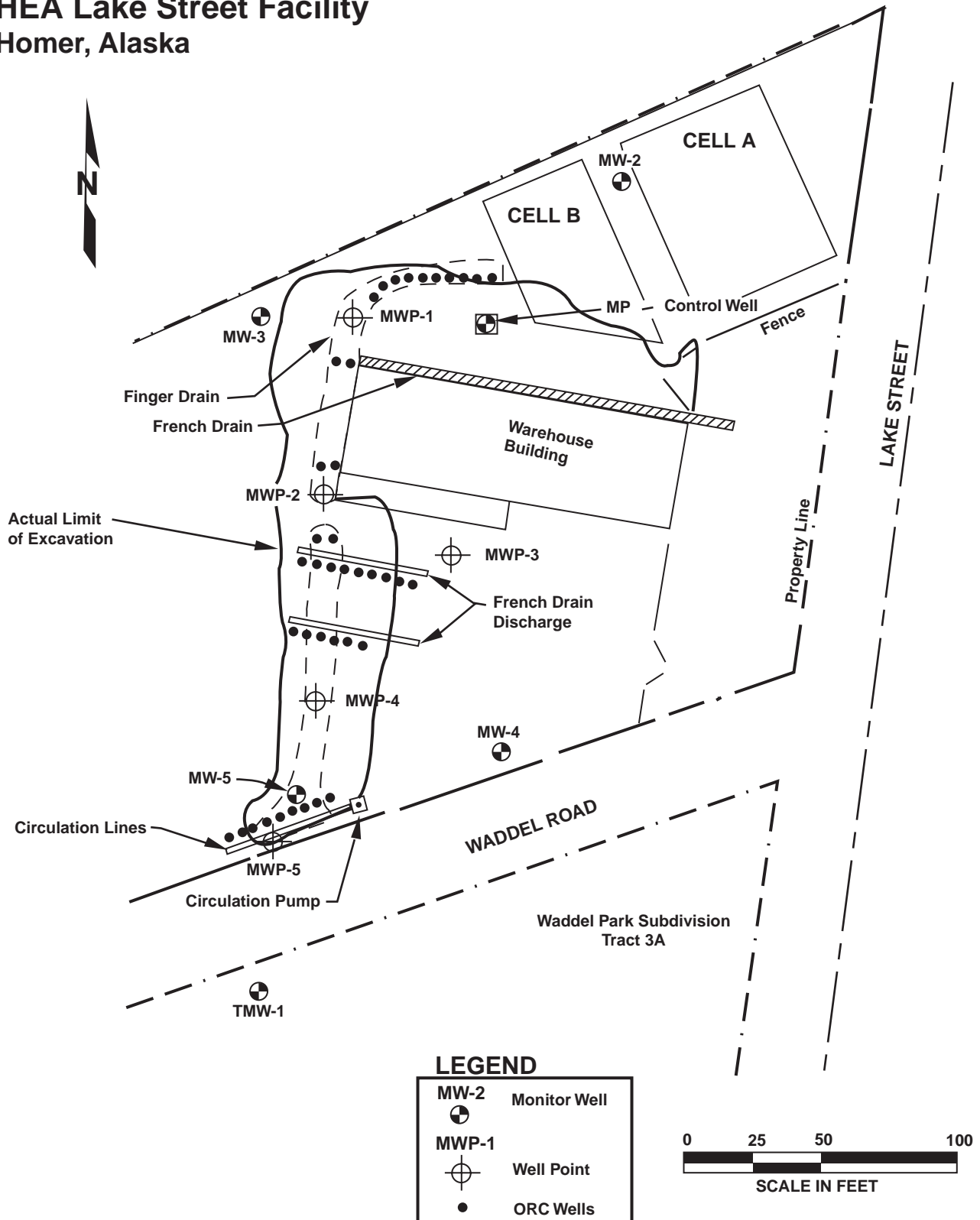


Figure 2

