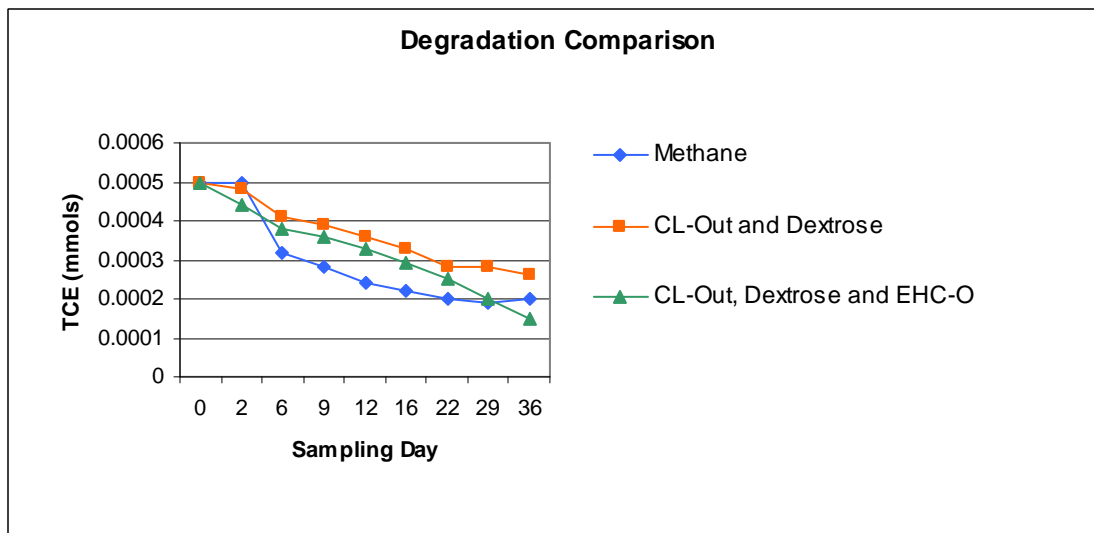




## BIOREMEDIATION CRIB SHEET #3

### *Bench-Scale Comparison Between CL-Out® Cometabolism and Methane Cometabolism*

A bench-scale treatability study was completed by an independent laboratory to compare the relative effectiveness of methane and CL-Out® cometabolism. Three microcosms were set up in triplicate using TCE-contaminated ground water. Methane was introduced into one of the microcosms. CL-Out® and dextrose were added to a second. CL-Out®, dextrose, and EHC-O® were added to a third. The EHC-O® is a slow-release oxygen supplement used to maintain the oxygen available for aerobic cometabolism. Other microcosms were set up as standards.



The microcosms were tested periodically for TCE and daughter product concentrations. The chart shows the average TCE concentrations in the three replicate microcosms. The untreated standards showed no degradation or removal of TCE and are not included in the comparison for simplicity. Daughter products, such as DCE or vinyl chloride were not detected in any of the microcosms, showing the TCE removal was complete.

A comparison of TCE concentrations showed methane cometabolism had a more rapid early degradation rate that reached an asymptote at about 20 days. The CL-Out® and dextrose microcosm also reached an asymptote after about 20 days. The CL-Out®, dextrose and EHC-O® microcosm continued TCE removal at a steady rate through the end of the treatability study.

The treatability study indicates that CL-Out® cometabolism was as effective in the removal of TCE as methane cometabolism. With the addition of an oxygen release compound, CL-Out® cometabolism was more effective than methane cometabolism.