

Reducing O&M Costs by Monitoring Well Conversion

Through the use of ORC, sampling and monitoring costs can be significantly reduced. There can be savings both in short-term operational costs and in the long-term due to early site closure. On many sites, excess monitoring wells are drilled during the assessment phase which are unnecessary for long-term management. ORC may be placed in the excess wells, fostering active aerobic remediation, thereby reducing treatment time. Furthermore, the conversion of these wells will result in less monitoring expense.

Considering a one-acre site with 20 four-inch wells, 20% of which are not contributing any important information but must be monitored quarterly at \$1,000 per well, (assuming RCRA site), the gross savings after implementing ORC in these wells would be \$16,000 per year. Taking into account the cost of ORC at \$3,000 per year (10 four-inch ORC socks per well changed every six months), the net savings is \$13,000 per year. Over many years, the savings becomes substantial; twenty years of this “excess” monitoring as described would cost an additional quarter-million in monitoring fees. (These arguments assume an ORC well is reclassified as a remediation well as opposed to remaining a monitoring well.)

ORC will passively reduce the overall contaminant mass, reducing project time. It is generally true that the addition of oxygen accelerates the rate of bioremediation by a factor of at least 10, relative to anaerobic processes. In the above example, with an accelerated aerobic remediation rate in 4 of the 20 existing wells, the site will be remediated about 18% more quickly. In a ten-year time-frame, the project could be closed seven quarters earlier for an additional total savings of \$140,000.

The total savings on a ten-year basis would be \$247,000 which is the sum of 8.25 years of reduced monitoring costs (\$132,000) plus early closure (\$140,000) minus the cost of implementing the program (8.25 years X \$3,000 per year = \$25,000). Were monitoring costs less, around \$500 per event required only twice a year, the savings would still be substantial (about \$60,000). On request, our staff will provide a more detailed, customized analysis for any site.