ADVANCED CHEMICAL OXIDATION ACHIEVES SITE CLOSURE FOR PETROLEUM HYDROCARBONS AND MTBE

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The subject site, a former gasoline service station in Culver City, California was identified as having elevated concentrations of petroleum hydrocarbons, including Methyl-Tertiary Butyl Ether (MTBE). The persistent levels of MTBE in groundwater were hindering site closure from the Los Angeles Regional Water Quality Control Board (LARWQCB). Historic and on-going remediation activities included an operations and maintenance intensive air sparging/soil vapor extraction system. Confirmation borings and system rebound testing showed no detectable concentrations of benzene and MTBE in vadose zone soil. Soils only closure was granted in June 2006. An alternative technology was sought to expedite groundwater cleanup to Charnock Basin cleanup levels and receive site closure by effectively treating the remaining gasoline constituents, including MTBE. In January 2006, a pilot test was conducted deploying an injectable, advanced chemical oxidation product into an area of high MTBE concentrations. The treatment was successful at reducing gasoline and MTBE concentrations by two to three orders of magnitude in two groundwater monitoring wells within the pilot test treatment area. Following the June 2006 soils closure, the air sparging system and all aboveground equipment was removed clearing the site for unobstructed use by the landowner. In December 2006, the focus of the remediation efforts shifted to site-wide groundwater treatment. A total of 38 direct-injection points at various locations throughout the site were targeted for groundwater chemical oxidation treatment. Within each injection point, the chemical oxidant was injected at a rate of 40 pounds per foot over an interval of 10 feet for a total of 400 pounds of chemical oxidant per injection point. As a result of the chemical oxidation treatment, significant reductions for gasoline constituents including MTBE were observed and recorded. In August of 2007, complete site closure was granted from the LARWQCB.

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