

Easy Installation and Quick BTEX Reductions in Poorly Accessible Off-Site Locations Using Biosparging via Nested Horizontal Wells

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Background/Objectives. Plumes under adjacent properties typically require additional logistics, permissions, and often dramatically increase the time and effort to complete remediation. In worst case scenarios, these properties can completely prohibit remediation offsite. Vertical well point arrays lead to poor coverage around buildings and roads and require significant unwanted trenching. Historically, large horizontal remediation wells provide options for these sites, but installation has typically been too expensive for smaller sites. A more passive biological remedy is desired and practical, but delivery is the challenge.

Approach/Activities. The Former Convenience Store Site in Orlando, Florida, utilized compact nested horizontal wells to perform biosparging under three adjacent properties funded by the Florida State cleanup program. The more cost-effective remedy was applied to a smaller hydrocarbon plume that was approximately 16,600 sf and 120 ft in length. The horizontal directional drilling allowed seamless and easy installation from a more convenient location which traversed under two adjacent properties with significant site structures, and the third property with a resistant site owner. Installation incorporated 16 independent well screens to provide maximum control utilizing two bores and was completed in only five days.

Results/Lessons Learned. Startup of the system indicated biosparge influence within the first month and excellent reductions as reported by laboratory data to below state cleanup criteria within the first quarter in four of the key monitoring wells. The client was impressed with the speed of the well system installations and the quick contaminant reductions. The obstacles, benefits, specifics of installation, and results will be discussed in this presentation.