

Stapleton Redevelopment Excavation/Chemical Oxidation Denver, Colorado

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In 1995 Stapleton International Airport was replaced with the more modern Denver International Airport, which was constructed in an alternate location. Over the past 10 years, decommissioning of Stapleton Airport and redevelopment of the area into a planned residential and commercial community has been ongoing.

O & M, Inc. was contracted to perform investigation activities at the site.



The investigation revealed that 40 feet of vadose zone soil and the surficial aquifer had been significantly contaminated by petroleum constituents. Due to scheduled construction of homes and businesses at the site, the primary remedial selection criteria were the speed and ultimate effectiveness of the remedial approach.

O & M, Inc. was tasked with developing a remedial approach to meet the project requirements cost effectively. Bench-scale testing was conducted to evaluate several remedial technologies. Based on the evaluation, excavation of the surface soil hotspots and Chemical Oxidation of the contaminants in the groundwater was determined to best meet the client's objectives.

O & M, Inc. completed the project turn key including investigation, design, permitting, implementation, and post implementation sampling. 6,000 cubic yards of contaminated soil was excavated for off-site disposal. Subsequent to backfilling the excavation, injection well network was installed with a designed 15-foot effective radius of influence. The designed effective radius of influence was determined based on pump and injection data which was reduced using computer modeling software, and tracer testing. Extensive analysis was performed to determine ideal design parameters, including the most appropriate oxidant, strength and volume of oxidant, optimum pH,

distribution network, and rate of injection. Four rounds of acidified ferrous sulfate and hydrogen peroxide (Fenton-like) injection were completed under a slight induced pressure.



Project Highlights

- ❑ The site was a former airport.
- ❑ **O & M, Inc.** contracted by client in 2000.
- ❑ Corrective Action Plan completed in 2001.
- ❑ **O & M, Inc.** completed a 6,000 cubic yard excavation.
- ❑ Sustainable contaminant reductions have been on the order of 95 - 99%.
- ❑ Colorado regulatory agency recently determined that remediation is complete and that no further remediation or monitoring is required.