

Case Study:

Soil Vapor Extraction and Condensation of Gasoline Range Organic Off-Gas *West Texas*

Project Overview

Location: West Texas

Contaminants: Gasoline Range Organics (GRO), 1,2-Dichloroethane (DCA), Benzene

Duration: 2009-2013

Vmqq 000.09

Maximum Off-Gas

VOC Concentration:

Total NAPL Recovered: 2,135,000 lbs

Soil Type: Medium to Coarse Sand Vadose Zone; Groundwater Depth: 150 ft bgs.



Site History

Historical petroleum refining operations and off-spec fuel disposal created the source of soil and groundwater contamination. Analyses of samples collected during site investigations documented significant LNAPL levels and ground water concentrations of Benzene > 19,000 ppb and 1,2-DCA > 380 ppb. The USEPA established an MCL of 5 ppb for both COCs. Vadose zone source areas majorly contributed to the ground water contamination. (continued on next page)



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Site History (continued)

To achieve the remedial objective and protect offsite ground water, a 10-year long soil and groundwater treatment plan was implemented, including the installation of 21 groundwater extraction wells and 62 soil vapor extraction (SVE) wells. C3 technology was integrated into the treatment system for extraction and processing of the off-gas streams from both the air stripper (from the groundwater wells) and the SVE well network.





Performance Evaluation

C3 Technology extracted and processed near-saturated off-gas contaminant streams to accelerate the remediation (as compared to thermal oxidation). C3 Technology eliminated air emissions from the treatment plant and reducing the carbon footprint of the remediation efforts by allowing for the recycling of over 350,000 gallons of fuel to a nearby refinery. Over 70% of the energy costs of the system were recovered by the sale of recovered fuel in the first year of operation.

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