

Pesticide Impacted Site



Location: Phoenix, Arizona

Site Issue: Soil containing organochlorine and organophosphorus pesticides

Solution: On-site temperature thermal desorption

Client: Confidential Fortune 500 Company

Total Cost: \$6,000,000



Brief History

This 36-acre site was formerly used as a crop dusting service facility and is scheduled for residential development. Mixing of pesticides, loading of mixed pesticides into airplanes, washing of airplanes, and burning of used pesticide drums and containers were some of the activities conducted on-site. The site soils were contaminated with organochlorine and organophosphorus pesticides, including p,p'-DDD, p,p'-DDE, p,p'-DDT, toxaphene, methyl parathion and ethyl parathion.

Prior to the project, pesticide containing soil was generally treated via incineration or transported off-site to a hazardous waste site. Both of these options were extremely costly. HE&C personnel developed an innovative and cost-effective approach to treat the soils using low temperature thermal desorption.

HE&C personnel designed and implemented bench-scale treatability studies to determine the efficiency of low temperature thermal desorption in thermally removing the pesticides from the contaminated soil. Based on the treatability study results and subsequent negotiations with consultants and regulatory agencies, full-scale thermal desorption was implemented to remediate the site soil.

Primary Activities Performed by HEC Personnel

- Developed final remedial design.
- Prepared remedial action project plans and obtained approval from the Arizona Department of Environmental Quality.
- Negotiated and obtained air pollution control permit from regulatory agency. Permit application included estimation of potential risk to population using air dispersion modeling.
- Site was located adjacent to an up-scale golf club. A larger bunker was installed around the thermal treatment system to minimize impact to the club members.
- Implemented the remedial action. The soil was excavated and thermally treated. The treated soil was analyzed on-site and certified to meet cleanup criteria prior to backfilling. Process throughput rates of 30 to 45 tons per hour were achieved during treatment. More than 56,000 tons of soil were treated at this site.
- Worked with U.S. EPA personnel to organize a Superfund Innovative Technology Evaluation (SITE) demonstration of low temperature thermal desorption to treat pesticide containing soil.

