



Aerial Radiological Surveys at Hanford

A Department of Energy Recovery Act Project

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Officials at the Hanford Site in Washington State are using an innovative, cost-saving approach to measure radioactive contamination in the soil. In late September, a Bell 412/HP helicopter made several passes over a portion of the 586-square-mile government site that produced plutonium from the 1940s to the 1980s. Detectors and electronics on the aircraft recorded the type and location of contamination.

Data collected by the helicopter is helping engineers focus cleanup efforts on several areas of shallow soil contamination in the BC Control Area, which covers approximately 13 square miles. The surveys were required before cleanup of the contaminated soil began in October. The helicopter was flown at about 80 m.p.h. and at a specified height to avoid disturbing the soil, minimizing disturbance of the shrub-steppe ecosystem.

In addition to environmental benefits, the aerial surveys cost an estimated \$700,000 less than traditional surveying using vehicles and a six-person crew on the ground. The aerial surveys took days as opposed to eight months for ground-level measurements, allowing cleanup to begin sooner.

The primary contaminants of concern are cesium and strontium, radioactive materials that were a byproduct of plutonium production in the 1950s and 1960s. Contaminated liquids from chemical separations facilities were disposed of in large trenches in the ground. Before the trenches were covered with sand and gravel in 1969, some of the material was dispersed by the wind, and to a lesser extent, by animals.

Contractor CH2M HILL Plateau Remediation Company will use heavy equipment to remove remaining areas of contaminated soil. Cleanup of the BC Control Area is being funded by the American Recovery and Reinvestment Act, along with remediation of more than 50 other waste sites and demolition of dozens of buildings that once helped produce plutonium for the U.S. nuclear weapons program at Hanford.

Technology benefits:

Aerial radiological surveys produce a high-confidence detection of shallow soil radiological contamination that reduces:

- Worker risk
- Taxpayer cost
- Environmental impact
- Hanford Site cleanup footprint

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