United States Department of Agriculture

Agricultural Research Service

Beltsville Agricultural Research Center Low-Level Radiation Burial Site Decommissioning

April 2010

The U.S. Department of Agriculture's Agricultural Research Service (ARS) has completed an investigation of the nature and extent of any soil or groundwater contamination at the Low-Level Radiation Burial Site (LLRBS) at the Beltsville Agricultural Research Center (BARC). A decommissioning plan for the site's closure has been completed and remedial activities are currently being planned.

Background

The LLRBS is an inactive landfill formerly used for the disposal of low-level radioactive waste and other wastes from BARC laboratories from the late 1940s to the mid-1980s. The fenced site is about 60,000 square feet (1.4 acres).

This site was licensed by the Nuclear Regulatory Commission (NRC) for disposal activities. The NRC license was renewed in 2005 to allow decommissioning, remediation, and closure. The renewed license prohibits any further burials of radioactive material and stipulates requirements for continued maintenance and monitoring of the site, as well as preparation of a decommissioning plan and cleanup.

The total volume of waste buried at the site is not completely known. ARS records indicate that, between 1951 and 1987, 50 pits were excavated, each about 10 feet wide by 12 feet long by 10 feet deep, with 6 feet between pits. Five feet of clean backfill was reported to have been placed on top of the contents of each pit in order to fill the pits to ground level. ARS estimates that as much as 33,000 cubic feet of wastes were buried at the site.

Among the low-level radioactive materials buried in the LLRBS were scintillation vials; metal, glass, and plastic objects, as well as animal remains and wastes. It is also likely that ash from incinerated animal tissue is buried in the pits.

Carbon-14, tritium, and radium 226/228; radioisotopes that were used in BARC research are known to have been disposed of in the LLRBS.

Radium is an alkali earth metal used in cancer treatments and scientific research. Tritium, which has a very weak radiation that cannot penetrate skin, is used to label compounds such as carbohydrates, nucleotides, and amino acids so they can be tracked in experiments. Carbon-14 is used as a tracer in biological systems and for archaeological dating. Ithas not been found to be harmful to human health.

Past and Ongoing Activities

Investigation of the LLRBS has included sampling and analysis of groundwater in the vicinity of the site to determine the extent, if any , of contaminant migration; installing permanent monitoring wells; sampling and analysis of nearby surface water and sediment; and tasks associated with modeling any residual radioactive contamination in soil and potential future impacts to groundwater.

A Waste Characterization Survey was completed in 2006 to identify the contents of five individual burial pits, selected to be representative of all of the disposal pits. Survey data is currently being used to determine excavation approaches and cleanup procedures and to identify waste disposal options and likely waste transport-tation and disposal costs.

Future Activities

Regular groundwater sampling will continue to monitor for the presence of radionuclides and other contaminants of potential concern

A Decommissioning Plan has been approved by regulatory authorities, and full-scale removal and remediation activities are being scheduled. Currently, it is anticipated that remediation activities will be initiated in late 2010.

For More Information:
Contact Kim Kaplan, ARS Information Staff, 301-504-1637, Kim.Kaplan@ars.usda.gov, or visit the ARS Information Repository located in Room 121, Building 003, 10300 Baltimore Avenue, Beltsville, MD. The Information Repository is open to the public Monday through Friday, 8:30 am to 4:30 pm.

The Information Repository is also available at the Prince George's County Memorial Library at 4319 Sellman Road. The library's hours of operation are Monday and Tuesday, 1 pm to 9 pm; Wednesday through Friday, 10 am to 6 pm; and Saturday, 10 am to 5 pm.

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