Fact Sheet
Solid Waste Management Unit 39
December 2009

Introduction

This fact sheet describes the recommended action for contaminated soil at Solid Waste Management Unit (SWMU) 39 – Wastewater Ponds from the Propellant Incinerators at Radford Army Ammunition Plant.

Background

SWMU 39 consists of two unlined and bermed earthen ponds that are located in the north-central section of the Horseshoe Area. The earthen settling ponds at SWMU 39 received scrubber and precooler quench water from incinerator exhaust. The ponds were excavated 6-8 feet into the natural grade and the excavated soil was used to make a berm that surrounds each pond.

Previous Investigations at SWMU 39 include:

- 1987 RCRA Facility Assessment
- 1992 Verification Investigation (VI)
- 1998 RCRA Facility Investigation (RFI)
- 2002 RFI and Corrective Measures Report (CMS)

Soil Contamination Assessment -Results from the surface and subsurface soil samples from the ponds and surrounding areas indicated that lead in the surface soil of the settling ponds is the constituent of greatest concern. Fate and transport analysis indicated that lead is immobile under site conditions and confined to surface soil in the settling ponds. Groundwater results from the area also indicate that the elevated constituents in the ponds are not migrating.

Corrective Measures Study

A CMS was performed to evaluate remediation options for the site. Four corrective measures were evaluated for effectiveness, implementability, and cost.

These alternatives consist of the following:

- Alternative No. 1: No Further Action;
- Alternative No. 2: Institutional Controls (Land Use Controls, Groundwater Monitoring);
- Alternative No. 3: Excavation of Soil with Waste in Place, Offsite Disposal, and Institutional Controls (Land Use Controls, Groundwater Monitoring); and,
- Alternative No. 4: Excavation of Soil for Clean Close Out and Off-site Disposal

Alternative four was selected as the final alternative for SWMU 39 because it is implementable and provides a greater level of protection to human health and the environment not provided by the other Alternatives. Alternative 4 is the only alternative that facilitates clean closure.

This alternative includes the following:

- Delineation of soil containing contaminants of interest (COIs) above the Residential RG;
- Excavation of the delineated area such that the remaining soil is below the Residential RG;
- Transporation and off-site disposal of soil; and,
- Site restoration activities.

The data, findings, assessments, and recommendations are contained in the SWMU 39 RFI/CMS Report dated July 2005. This report was approved by the Radford AAP (RFAAP), U.S. Army Environmental Center (USAEC), U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), U.S.

Environmental Protection Agency (USEPA) Region III, and the Virginia Department of Environmental Quality (VDEQ).

Interim Measures Work Plan (IMWP)

This Work Plan detailed site-specific procedures for the IMs at SWMU 39. Specifically, this IMWP addresses the removal of soil with concentrations of arsenic, lead, vanadium, and dioxins/furans to below the Residential Remedial Goal (RG) of 15.8, 400, 108, and 0.001 milligrams per kilogram (mg/kg), respectively, to facilitate clean closeout in accordance with Part II(D)(11-21) IM of the RFAAP 2000 Corrective Action Permit.

This Work Plan was approved by Radford AAP (RFAAP), U.S. Army Environmental Center (USAEC), U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) U.S. Environmental Protection Agency (USEPA) Region III, and the Virginia Department of Environmental Quality (VDEQ).

Removal Action

The removal action is complete. It was conducted to mitigate the threat of a contaminant release, migration, and/or exposure to the public and the environment, as well as facilitate clean closeout in accordance with Part II(D)(11-21) IM of the RFAAP 2000 Corrective Action Permit. The IMs include:

1. Site Preparation. Prior to commencement of work, a utility survey was performed and dig permits were obtained. In addition, erosion/sediment control measures were implemented.
2. Soil Delineation Sampling. Delineation of soil containing arsenic, lead, vanadium, and dioxins/furans above the Residential RG.
3. Fence Removal. Removal of chain-link fence surrounding SWMU 39.
4. Soil Excavation. Excavation of the delineated area such that the remaining soil is below the Residential RG.
5. Waste Characterization & Off-site Disposal. Samples were collected to assess appropriate disposal options prior to soil excavation. Sample results determined the appropriate off-site disposal method.
6. Confirmation Sampling. Samples were collected after removal of the contaminated soil to ensure that impacted soil had been removed. Excavation continued until the RGs were met.
7. Site Restoration. Following the removal of soil, the site was restored (the ponds were filled with clean soil to surrounding grade) and all equipment was demobilized.

For more information, please contact Ms. Joy Case, RFAAP Public Relations Officer, by phone at 540-731-5762 or by Email: joy.case@us.army.mil