

Fact Sheet

Solid Waste Management Unit 51 December 2009

Introduction

This fact sheet describes the recommended action for contaminated trench sludge material and contaminated soil at Solid Waste Management Unit (SWMU) 51 - Trinitrotoluene (TNT) Waste Acid Neutralization Pit.

Background

SWMU 51 consists of one trench (140 ft long x 23 ft wide x 14 ft deep) that was used for the disposal of TNT neutralization sludge and red water ash. TNT neutralization sludge is generated from the treatment of red water - a waste product from TNT production. De-liquefaction (settling/evaporation) of the red water resulted in the sludge that was disposed of in the SWMU 51 trench. The ash is the result of burning the sludge prior to disposal. The trench contains elevated levels metals, dioxins and TNT, DNT and related compounds.

Several investigations have been conducted to identify the chemical constituents in the sludge and to assess the extent of the trench.

Soil Contamination Assessment – The main concern at this site is the trench sludge material and grossly contaminated soil immediately below the sludge material. Soil samples collected from above the trench sludge indicate that clean soil was emplaced above the sludge once the pit was no longer in use. Samples from below the grossly contaminated soil indicated that there has been very little downward migration from the site to groundwater.

Groundwater Contamination Assessment – An analysis of the groundwater data indicates that constituents detected in the soil are not migrating to groundwater and that removal of the source area (trench sludge and grossly contaminated soil) will prevent any future impacts to groundwater.

Corrective Measures Study

An evaluation of corrective measures to address the sludge and grossly contaminated soil at SWMU 51 was performed. These alternatives were evaluated:

Alternative One: No Further Action

Alternative Two: Institutional Controls (Industrial/Commercial Use Scenario Land Use Controls, Groundwater Monitoring).

Alternative Three: Excavation of Sludge and Grossly Contaminated Soil and Off-site Disposal with Land Use Controls and No Long-Term Monitoring.

Alternative Three was selected for its implementability and because it provides a greater level of protection to human health and the environment that would not be provided by the other alternatives. Alternative Three eliminates the potential threats to human health and the environment that exist from the sludge material and grossly contaminated soil under the sludge material as well as the eliminate the threat for a potential future release of contaminants from the sludge material to groundwater.

This alternative includes the following:

- Delineation of sludge material
- Excavation of the delineated sludge as well as grossly contaminated soil present under the sludge
- Transportation and off-site disposal of soil
- Site restoration

The data, findings, assessments, and recommendations are contained in the SWMU 51 RFI/CMS Report dated July 2008. This report 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).

Interim Measures Work Plan (IMWP)

This Work Plan detailed site-specific procedures for the IMs at SWMU 51. Specifically, this IMWP addressed the removal of sludge and grossly-contaminated soil with concentrations of 1,3-dinitrobenzene (DNB), 2,4-dinitrotoluene (DNT), 2,6-DNT, nitroglycerin (NG), 2- and 4-nitrotoluene (NT), 2,4,6-TNT, dioxins/furans, aluminum, and lead 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.
2. Soil Delineation Sampling and Excavation. Delineation of sludge material and grossly-contaminated soil under the sludge material and excavation of the delineated area such that the remaining soil is below the selected RGs.
3. Waste Characterization & Off-site Disposal.
4. Confirmation Sampling. Samples were collected after removal of the sludge and grossly contaminated soil to ensure that impacted soil had been removed. Excavation continued until the RGs were met.
5. Site Restoration was completed.

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