

# *Radford Army Ammunition Plant*

---

## **FACT SHEET SWMUs 48 & 49**

### **Introduction**

This fact sheet describes the recommended action for addressing elevated constituents in soil at Solid Waste Management Unit (SWMU) 48 [Oily Water Burial Area] and groundwater at SWMU 49 [Red Water Ash Burial No. 2] at Radford Army Ammunition Plant (RFAAP).

### **Background**

SWMUs 48 & 49 are adjacent to each other and are located in the southeastern portion of the Horseshoe Area. These SWMUs are situated on a bluff approximately 120 feet above and overlooking the New River.

SWMU 48 consists of two sets of unlined trenches, one at the northern end of the site and one at the southern end. SWMU 49 is a small clearing adjacent to a dirt road. There is no evidence of pits at this site and waste was likely disposed on the ground surface. Prior to off-post waste oil reclamation, approximately 200,000 gallons of oily wastewater removed from oil/water separators throughout RFAAP was reportedly disposed of in SWMU 48. However, the results of environmental sampling to date indicate that the oily wastewater was likely disposed of in the area associated with SWMU 49. Conversely, sampling indicates that the red water ash associated with SWMU 49 was disposed in the SWMU 48 disposal trenches. Because it is apparent that there was some degree of cross disposal occurring at SWMUs 48 and 49, this area was considered a combined study area consisting of both SWMUs.

Six investigations have been conducted at SWMUs 48 & 49 between 1987 and 2012 to evaluate soil and groundwater at the sites. The results of these investigations are summarized below.

### **Interim Measures**

Based on the results of a 2007 RCRA Facility Investigation (RFI) field sampling effort, an aggressive test pit exploration was performed at SWMU 48 in 2010. The test pits were advanced downward through an ash layer, and extended laterally to determine the vertical and horizontal extent and boundaries of the ash layer. Composite samples were collected and tested to determine if excavated soil contains explosive or waste characteristic concentrations above Toxicity Characteristic Leachate Procedure Regulatory Levels (TCLP RLs). Nine explosives were detected in the soil, all below the Environmental Protection Agency's (EPA) residential Screening Levels (r-SLs), with a single detection of NG that exceeded the residential criteria. Antimony, arsenic, cadmium, copper, lead, and mercury exhibited instances of industrial screening level (i-SL) exceedances. Based on the concentrations of metals, an Interim Measures removal action was performed to remove the elevated metals concentrations and the ash layer. An Interim Measures Work Plan was approved by the U.S. Environmental Protection Agency (USEPA) Region III and the Virginia Department of Environmental Quality (VDEQ) in July 2011. The excavation and confirmation sampling at SWMU 48 has been completed, and the Interim Measures Completion report has been submitted and is under review. Following the completion of the Interim Measures, a revised RFI report was prepared and submitted to EPA and VDEQ for review.

### **RCRA Facility Investigation**

The data, findings, assessments, and recommendations are contained in SWMUs 48 and 49 RFI Report dated June 2012. The report has been submitted for review by the USEPA and VDEQ.

### **Soil Contamination Assessment –**

No analytes were detected above screening limits in 2007 soil samples from SWMUs 48 and 49. A detection of TNT above the screening levels during an earlier investigation could not be duplicated in subsequent

investigations. Interim Measures were performed to address elevated constituents in soil at SWMU 48 in 2012. Soil results from SWMU 49 did not indicate any areas of contamination that needed to be addressed at that site. Therefore, soil is not a major concern at SWMUs 48 and 49.

#### Groundwater Contamination Assessment-

Groundwater samples collected from SWMUs 48 and 49 indicated that three Volatile Organic Compounds (VOCs) [carbon tetrachloride (CT), tetrachloroethene (PCE), and trichloroethene (TCE)] as well as 11 metals were detected at concentrations exceeding groundwater screening levels. The elevated metals are likely due to a high turbidity groundwater sample collected from one well on site. Comments received from EPA and VDEQ on the draft RFI report led to additional wells being installed to the south and east of SWMU 49 to establish the extent of these VOCs in groundwater and verify that they were not impacting the New River. A report discussing the groundwater findings is currently being prepared.

Perchlorate has been detected in the SWMU 48/49 monitoring well network during the groundwater sampling events in August of 2007. Analytical data for perchlorate range from 0.186µg/L to 0.548µg/L. The maximum contaminant level (MCL) for perchlorate at RFAAP is 15µg/L.