

# **NPL Site Narrative for Redstone Arsenal (USARMY/NASA)**

## **REDSTONE ARSENAL (USARMY/NASA) Huntsville, Alabama**

Redstone Arsenal (RSA) is located in Huntsville, Madison County, Alabama. RSA encompasses 38,300 acres, 36,459 of which the Department of the Army controls. The George C. Marshall Space Flight Center (MSFC) leases the remaining 1,841 acres. Approximately 15,500 acres are woodlands, 9,200 are leased for agricultural use, and 4,100 are designated as the Wheeler National Wildlife Refuge. Morton-Thiokol Chemical Corp., a government contractor-operator, uses a portion of RSA property for the development of solid rocket propellants and the General Aniline and Film Corp. leases approximately 10 acres for the production of iron carbonyl. Olin-Mathieson Chemical Co. (DDT manufacturing), Raytheon Co. (rocket motor assembly), Rohm and Haas Allied Chemical and Dye (chlorine manufacturing), and Stauffer Chemical Co. (chlorine manufacturing) have conducted operations at RSA in the past.

Three separate military facilities (Redstone Ordnance Plant, Huntsville Arsenal, and Gulf Chemical Warfare Depot) were established at RSA in 1941 and worked together from 1942 to 1945, producing conventional and chemical munitions used during World War II. After the war, Gulf Chemical Depot stored captured German chemical agents and surplus chemical munitions and agents. The munitions were buried in various locations throughout RSA. As activities increased, the Army incorporated all lands that the three facilities previously used into the present day RSA.

Six mustard gas manufacturing plants operated at RSA from 1942 until 1943. These plants produced substantial quantities of sulfur monochloride, ethylene, brine, caustic soda, liquid caustic, chlorine, and thionyl chloride. Lewisite, a chemical warfare agent containing arsenic, was manufactured in four of the plants. Wastes generated from lewisite manufacturing were disposed in shallow surface impoundments.

Following World War II, the chemical manufacturing facilities were leased to private firms for production of commercial chemicals and pesticides. The manufacture of DDT and other pesticides resulted in significant amounts of hazardous wastes. Large quantities of wastewater containing DDT residues were discharged to Huntsville Spring Branch. An 11-mile stream segment, including Huntsville Spring Branch, Indian Creek and a portion of the Tennessee River in the Triana area, was placed on the National Priorities List in 1983 due to past DDT disposal practices. In 1983, Olin-Mathieson, the principal DDT manufacturer, began cleanup actions under a U.S. Justice Department consent decree.

In October 1983, RSA submitted a RCRA closure/post-closure plan for DDT Landfill Q1. RSA also submitted a Part B permit application in May 1984. Based on information provided in the closure/post-closure plan, EPA authorized RSA to remove DDT Landfill Q1 from its Part B permit application. Following revisions to the Part B permit application, RSA was issued a permit for nine Hazardous Waste Storage Igloos in April 1986. RSA submitted a revised Part B permit application on October 21, 1988. The Storage Igloos, Open Burning Pans and four new Storage Igloos continued to operate under interim status. MSFC filed three Part A applications for several areas on its leased portion of the site; however, MSFC submitted a closure plan in lieu of a Part B application.

Two aquifers beneath RSA are considered interconnected and are referred to as the Tuscumbia-Fort Payne aquifer. Three municipal systems have wells located within a 4-mile radius of RSA. An estimated 39,900 people utilize the wells as their source of drinking water.

For more information about the hazardous substances identified in this narrative summary, including general information regarding the effects of exposure to these substances on human health, please see the Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs. ATSDR ToxFAQs can be found on the Internet at [ATSDR - ToxFAQs](http://www.atsdr.cdc.gov/toxfaqs/index.asp) (<http://www.atsdr.cdc.gov/toxfaqs/index.asp>) or by telephone at 1-888-42-ATSDR or 1-888-422-8737.