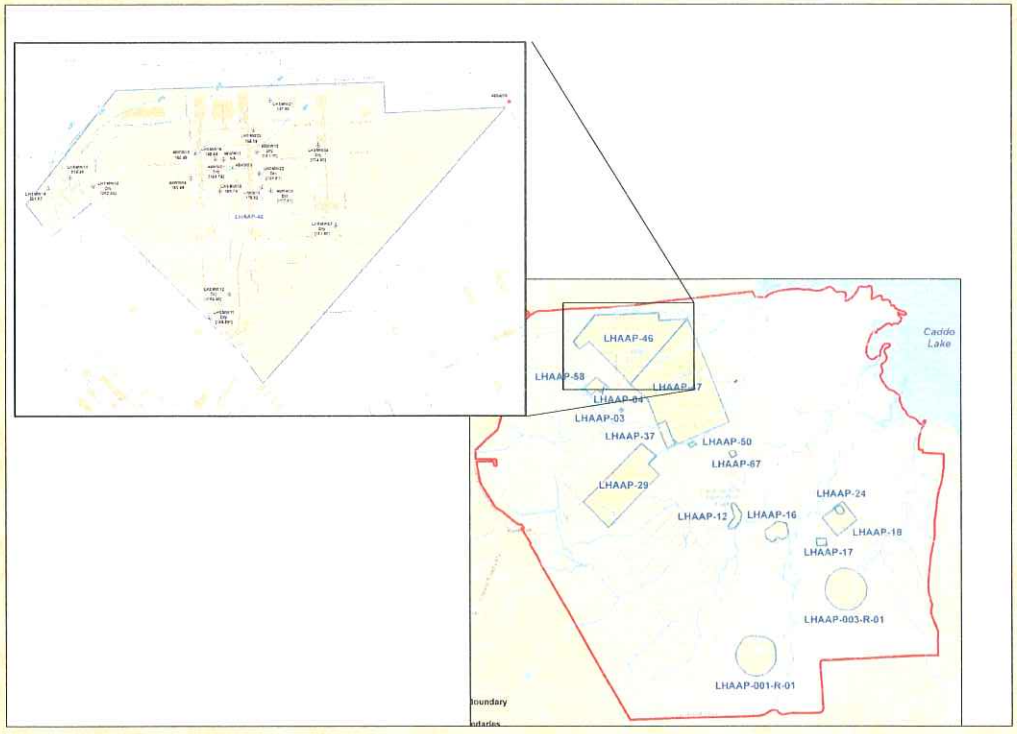
LHAAP-46, Plant 2 Area – Remedial Action Operations

Site History

LHAAP-46, (Plant 2 Area), is located in the north-central portion of LHAAP and covers approximately 190 acres. Facilities for producing JP-2 propellant fuel at LHAAP-46 began in 1944, but construction was halted in 1945 with the end of World War II. Plant 2 was used to produce pyrotechnic devices from February 1952 to 1956 and was reactivated to produce pyrotechnic and illumination devices in 1964 until approximately 1997.

Site Characteristics

The surface features at LHAAP-46 are a mixture of asphalt-paved roads, parking areas, building foundation remnants, old buildings, and overgrown wooded and grassy vegetation-covered areas. The topography in this area is relatively flat with the surface drainage flowing east into tributaries of Goose Prairie Creek, which eventually flows into Caddo Lake. The lake is a source of drinking water for several neighboring communities in Louisiana. Shallow zone groundwater is approximately 11 to 23 feet below ground surface (bgs) and flows to the east. Intermediate zone groundwater is approximately 23 to 30 feet bgs and flows to the Northeast.



LHAAP-46 Site Location

Risk Assessment

A baseline human health risk assessment (BHHRA) and ecological risk assessment were conducted for LHAAP-46 to determine current and future effects of contaminants on human health and the environment. Based on the BHHRA the soil does not pose a cancer risk or non-cancer hazard to the hypothetical future maintenance worker. However, the groundwater at LHAAP-46 poses an unacceptable non-cancer hazard to a hypothetical future maintenance worker under an industrial scenario with the exposure route of drinking the water or using the water for hand washing and showering. The baseline ecological risk assessment concluded no action is needed at LHAAP-46 for the protection of ecological receptors.

Chemicals of Concern

Between 1992 and 2008 numerous investigations were conducted in a phased approach to determine the nature and extent of contamination at LHAAP-46. Media investigated included soil and groundwater. Additional data gathered since the risk assessment (2003) did not change its outcome. Chemicals of Concern (COCs) for LHAAP-46 identified in the Feasibility Study are the trichloroethene (TCE) in the shallow and intermediate groundwater zones. TCE daughter products dichlorothene and vinyl chloride are also COCs.

LHAAP-46, Plant 2 Area – Remedial Action Operations (cont.)

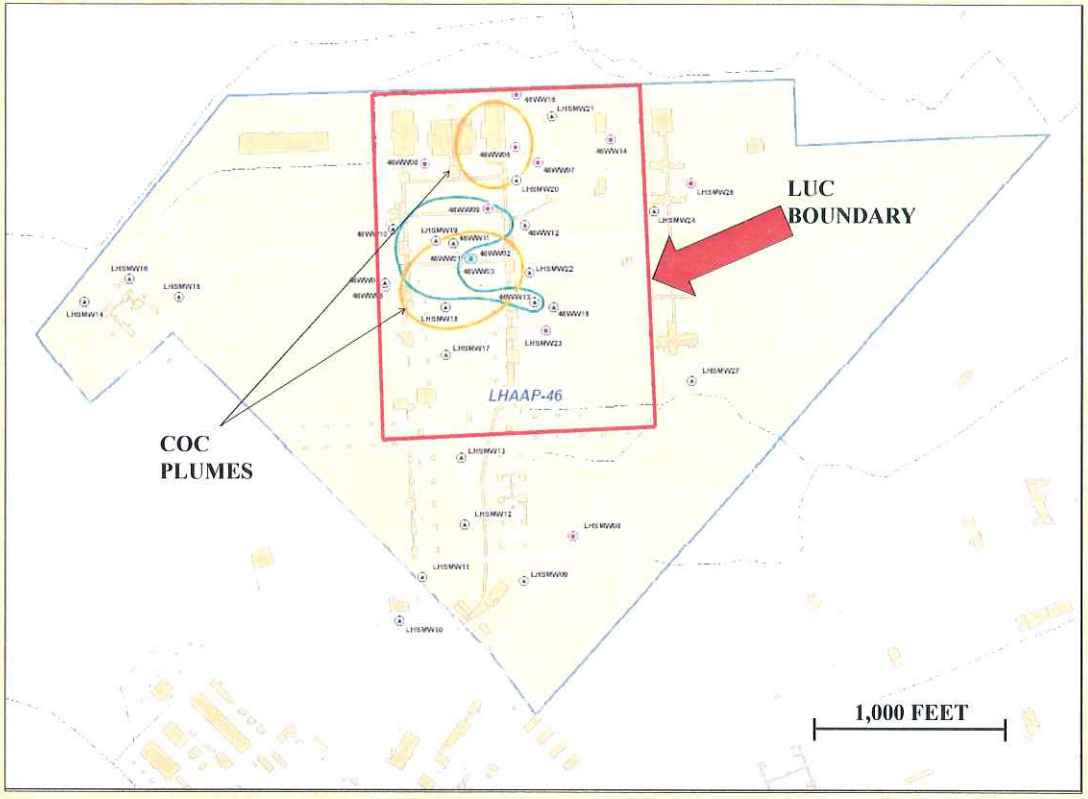
Remedial Action Objectives

The Remedial Action Objectives (RAOs) for LHAAP-46 which address contamination associated with the media at the site and take into account the future uses of LHAAP surface water, land, and groundwater are:

- Protect human health for the hypothetical future maintenance worker by preventing exposure to groundwater contaminated by VOCs (TCE and its daughter products).
- Protect human health and the environment by preventing contaminated groundwater from migrating into nearby surface water.
- Return groundwater to its potential beneficial use as a drinking water, wherever practicable.

Land Use Control Boundary

One element of the remedial action at LHAAP-46 is establishment of a land use control (LUC) area where withdrawal or use of groundwater is restricted to only environmental monitoring and testing. The LUC will remain in effect until the levels of COCs in groundwater and soil are at levels that allow for unrestricted use and unlimited exposure (UUUE). Army, with TCEQ and EPA concurrence, has established this LUC area to restrict groundwater use at LHAAP-46, completed a civil survey of that boundary and recorded the LUC notification with the Harrison County Courthouse in December 2014.



LHAAP-46 Land Use Control Area and COC Plume Footprints

Monitored Natural Attenuation (MNA)

MNA at the LHAAP-46 site is implemented to monitor COCs and ensure protection of human health and the environment. Performance monitoring to evaluate remedy effectiveness includes groundwater and surface water monitoring. The groundwater monitoring program is designed to evaluate and monitor natural attenuation of COCs in groundwater. The surface water monitoring program is designed to monitor potential migration of contaminated groundwater to surface water Quarterly groundwater samples were last collected from LHAAP-46 in February 2015, and will be collected again in May 2015.