MASSACHUSETTS MILITARY RESERVATION

April 2004

Air Force Center for Environmental Excellence

Storm Drain 5 South (SD-5S) Groundwater Plume

The Air Force Center for Environmental Excellence (**AFCEE**) is the agency responsible for the Installation Restoration Program (IRP) at the Massachusetts Military Reservation (MMR). The IRP is the program that cleans up soil and groundwater contamination resulting from historic use of MMR.

Where did this groundwater plume come from?

The source of the SD-5S groundwater plume is the Storm Drain 5 site on the MMR, which historically received runoff of chlorinated cleaning solvents and fuel constituents from various military and industrial activities on the base. The main contaminants of concern in the SD-5S plume are perchloroethene (PCE) and trichloroethene (TCE), both of which are volatile organic compounds (VOCs). These VOCs were formerly used as cleaning solvents.

What is the current status of the source area?

Excavation of contaminated soils at the SD-5N source area began in April 2001. Almost 6,500 tons of soil were removed and taken off-site for proper disposal at a state-permitted landfill. In August 2002, a soil vapor extraction (SVE) system was installed at the site. It was turned off in March 2003. For more information, please see the SD-5N plume fact sheet.

What is the current status of the plume?

Treatment System: In June 1999, AFCEE began operation of two recirculating wells in the main SD-5S plume body. Recirculating wells agitate groundwater allowing dissolved VOCs to release to the air where they are removed with carbon filters. In January 2000, AFCEE installed an extraction well to capture additional contamination. In December 2000, one recirculating well was turned off because the groundwater in the vicinity was below maximum contaminant levels (see MCLs below). By April 2003, the second recirculating well was shutdown.

Through February 2004, over 600 million gallons of groundwater has been treated, removing almost 11.6 pounds of contaminants. This achieved approximately 92% of its total mass cleanup goal.

In February 2004, AFCEE, with concurrence from the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) has shutdown the extraction well. The Feasibility Study has been finalized and a Proposed Plan will be issued for public comment in Fall 2004.

Monitoring Program: AFCEE, the United States Environmental Protection Agency (EPA), and the Massachusetts Department of Environmental Protection (DEP) continually evaluate the results of the on-going SD-5S treatment through a monitoring program known as System Performance and Ecological Impact Monitoring (SPEIM).

The size of the SD-5S plume has been reduced significantly since the startup of the treatment system. The SD-5S groundwater plume extends 2,800 feet south of the SD-5N extraction, treatment, and reinjection (ETR) system toward the north side of Ashumet Pond and Johns Pond. Studies have shown that SD-5S discharges to Johns Pond. However, no plume contaminants have been detected in Johns Pond surface water. According to the Massachusetts Department of Public Health, Johns Pond is safe for swimming, wading, and boating.

The maximum contaminant level or MCL (as listed on the plume map) is a standard established by the EPA, under the Safe Drinking Water Act. It represents an acceptable level of a chemical that ensures the safety of a public drinking water supply. The DEP has established safe drinking water standards as well. If there are differences between federal and state levels for a given chemical, the more stringent (lower) value is applied.