

Groundwater Plumes

How are the groundwater plumes treated?

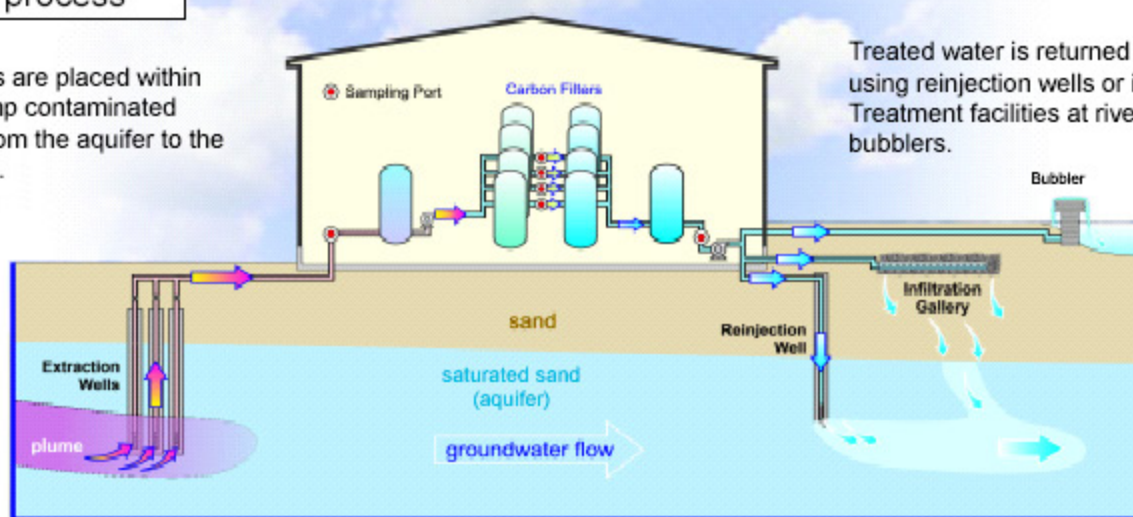
A plume is a body of groundwater containing contaminants that exceed federal and/or state safe drinking water standards. When chemicals from source areas travel downward through the sandy soils, they eventually reach the aquifer where they begin to dissolve. Once dissolved they begin to move with the groundwater, thus creating a groundwater plume. Contaminants of concern frequently found in plumes are volatile organic compounds (VOCs). Examples include carbon tetrachloride (CCl_4), ethylene dibromide (EDB), perchloroethene (PCE), and trichloroethene (TCE).

The groundwater treatment process

Extraction wells are placed within a plume to pump contaminated groundwater from the aquifer to the treatment plant.

Treatment plants clean up extracted contaminated groundwater by filtering it through carbon held in large vessels.

Treated water is returned to the aquifer using reinjection wells or infiltration galleries. Treatment facilities at river systems utilize bubblers.



What is the current status of the groundwater plumes?

The IRP is currently addressing 12 groundwater plumes. Many of these plumes are located beyond the MMR boundary and are currently in various stages of study and cleanup.

From the start of the groundwater cleanup in November 1993 through May 2007, treatment systems have removed more than 6,700 pounds of solvents and fuel-related compounds while treating more than 31 billion gallons of groundwater. Currently, systems treat 16 million gallons of groundwater per day. Computer modeling suggests that it may take more than 30 years to fully remediate all of the groundwater contamination associated with MMR. Plumes and treatment systems are continually being monitored and optimized to reduce the overall cleanup time.

- 11 plumes are undergoing groundwater cleanup: Ashumet Valley, Chemical Spill 4 (CS-4), CS-10, CS-20, CS-21, CS-23, Fuel Spill 1 (FS-1), FS-12, FS-28, FS-29, and Landfill 1 (LF-1).
- One plume, CS-19, is in long-term monitoring.
- Two sites are in long-term monitoring: LF-2 and Storm Drain 5 (SD-5). The groundwater contamination in these areas no longer meets the definition of a plume.

AFCEE makes decisions on treatment and monitoring of a plume by issuing a Proposed Plan and a Record of Decision (ROD). The Proposed Plan details AFCEE's preferred alternative and is issued with a 30-day public comment period. The ROD is issued after that and states AFCEE's final decision for a plume.

In September 2006 two final RODs were signed. The ROD for FS-12 Groundwater specified continued operation, maintenance, and monitoring of the existing groundwater treatment system and plume. The ROD for Groundwater at Eastern Briarwood, Western Aquafarm, and SD-5 called for continued groundwater monitoring for SD-5 and no further action for the Eastern Briarwood and Western Aquafarm areas.