AEROJET GENERAL CORPORATION SUPERFUND SITE

U.S. Environmental
Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

Site History and Background

The Aerojet General Corporation Superfund Site covers 8,500 acres (this number includes the carved out property to be used for development) near Rancho Cordova, 15 miles east of Sacramento, California. Since 1953, Aerojet and its subsidiaries have manufactured liquid and solid propellant rocket engines for military and commercial applications. In this process, they have formulated a number of chemicals, including rocket propellant agents and agricultural, pharmaceutical, and other industrial chemicals. Cordova Chemical Company (1974-1979) and Aerojet disposed of unknown quantities of hazardous waste chemicals. Some wastes were disposed of in surface impoundments, landfills, deep injection wells or leachate fields or by open burning. In addition, underlying most of the site are extensive 40-100 feet-deep dredge tailings, remnants of past gold mining operations.

The communities potentially affected by the groundwater contamination from this site are the City of Rancho Cordova, Carmichael, Fair Oaks, Folsom and Gold River (see groundwater plume map on back). Water purveyors providing water to these cities and communities test their wells to ensure federal and state drinking water standards are met.

Cleanup to Date

Under the oversight of the California Environmental Protection Agency Department of Toxic Substances Control (DTSC) and the Central Valley Regional Water Quality Control Board (RWQCB), the Aerojet General Corporation began investigating the nature and extent of groundwater and soil contamination throughout the site in 1979. In 1981, the United States Environmental Protection Agency (EPA) proposed the site for inclusion on the National Priorities List (NPL). The site was placed on the list in 1983. The NPL is a national inventory of hazardous waste sites that are eligible for cleanup under federal Superfund law.

In 1979, volatile organic compounds (VOCs) were found off-site in private wells. VOCs were also found in the American River in 1983.

Aerojet submitted recommendations for control of groundwater contamination north of the American River in 2004. EPA directed Aerojet to install more monitoring wells to better define the plume which will be completed in 2005.

Between 1983 and 1987, Aerojet installed five groundwater extraction and treatment (GET) facilities (GETs A, B, D, E and F) primarily to prevent further movement of VOC contaminants off the property (see map on back). The American River groundwater extraction and treatment (ARGET) system was added in 1998 and GETs E and F were combined in 1999 and expanded in 2002. Each GET facility consists of a series of extraction wells to intercept the contaminant plume and a groundwater treatment system to remove the contamination. The treated water is either injected back into the aquifer, discharged to land for recharge into the ground, or discharged to surface water bodies that flow to the American River.

Perchlorate, a component of solid rocket fuel, was found in drinking water wells off-site at levels above the current provisional health based standard in January 1997.

In 2001, EPA, DTSC and RWQCB sought public comment to modify their legal agreement with Aerojet called a partial consent decree (PCD). This modification included dividing the site into different areas called operable units (OUs) to help speed up the cleanup. The PCD modification was completed in 2002. The cleanup approach for the Aerojet site under the modified PCD is to control groundwater contamination moving across the facility boundary with two OUs (Western Groundwater OU and Perimeter Groundwater OU).

In 2003, analysis revealed that a portion of the groundwater just north of the American River in Carmichael, CA is contaminated with n–nitrosodimethylamine (NDMA).

Environmental Progress

The five interim GET systems currently in operation at the Aerojet General facility are reviewed for effective boundary control of groundwater contaminants. Based on groundwater flow direction, the Aerojet Superfund Site was divided into four zones. Zone 1 has GETs AR and D, Zone 2 has combined GET E and F, Zone 3 has GET B, and Zone 4 has GET A.

- Zone 1 - GET D VOCs capture was augmented by the completion of the American River GET in July 1998. GET D was modified in 2003 to add perchlorate remediation as a pilot study.
- Zone 2 - In late 1999, GETs E and F were combined to provide full perchlorate biological treatment and NDMA treatment was added for GET E effluent. GET E/F has been further modified to eliminate reinjection, add surface discharge to Buffalo Creek and improve containment.
- Zone 3 - GET B has been modified for improved NDMA destruction and perchlorate pilot treatment addition.
- Zone 4 - GET A has been modified for improved NDMA destruction.

Western Groundwater OU: The Western Groundwater OU (OU3) Record of Decision (ROD) was signed in 2000 and specified the selected cleanup plan for this portion of the site. The ROD directed Aerojet to contain contaminated groundwater on the western side of Aerojet and restore the aquifer between the on- and off-property containment systems. There are fifteen contaminants of concern (COCs) in OU3 groundwater but the primary contaminants are trichloroethylene, perchlorate, and NDMA. On-property perchlorate is removed from the contaminated groundwater at the combined GET E/F using a biological system developed by Aerojet. Off-property, the lower concentration perchlorate is removed by commercially-available ion exchange. Both on- and off-property NDMA and high concentration VOCs are removed by ultraviolet light treatment. Final VOC treatment consists of on-property air stripping and off-property use of granular activated carbon. Fourteen off-property extraction wells are currently operational and treating contaminated groundwater. These extraction wells are being monitored to make sure they are containing the groundwater plume. It is anticipated that the number of extraction wells will increase to 23 by the end of 2006.

Perimeter OU: This OU (OU5) covers the north, east and south boundaries of the site. The investigation was completed in 2005 and a proposed plan will be presented for public comment in 2006.

After completion of the source Operable Units 4 and 6 through 9, the site-wide investigation will be completed and a final risk review will be conducted to determine if further action is required.

Community Advisory Group

The Community Advisory Group for Aerojet Superfund issues meets bimonthly to exchange information with regulatory agencies and Aerojet on the current status of and community concerns regarding the investigation and cleanup of area groundwater contamination. To get further information on this group, contact Janis Heple, Chairperson, at (916) 739-6391.

For More Information

Site Repositories

Rancho Cordova
Community Library
9845 Folsom Blvd.
Sacramento, CA 95814
(916) 264-2700

California State University
Sacramento Library
2000 State University Drive East
Sacramento, CA 95819-6039
(916) 278-6926
Government Documents

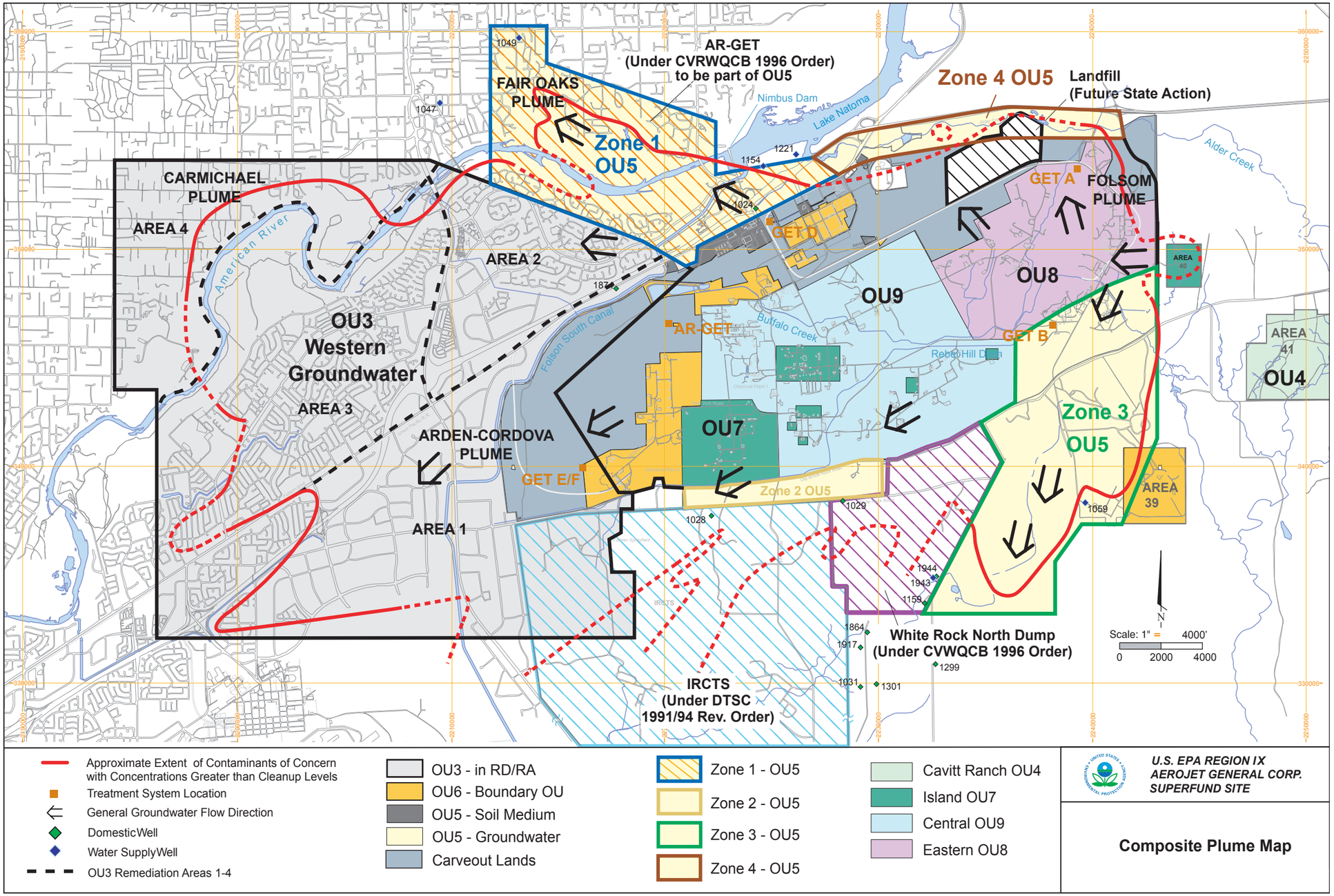
Superfund Records Center
95 Hawthorne Street
San Francisco, CA 94105
(415) 536-2000

Site Web Page

yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/
Scroll down and
click Site Overviews.

See Contact Information on back.

Last Update: Fall 2006



See general site description on other side.

Last Update: Fall 2006

Contact Information

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