

Community Involvement Plan

Aerojet General Corporation Superfund Site
2004 Update



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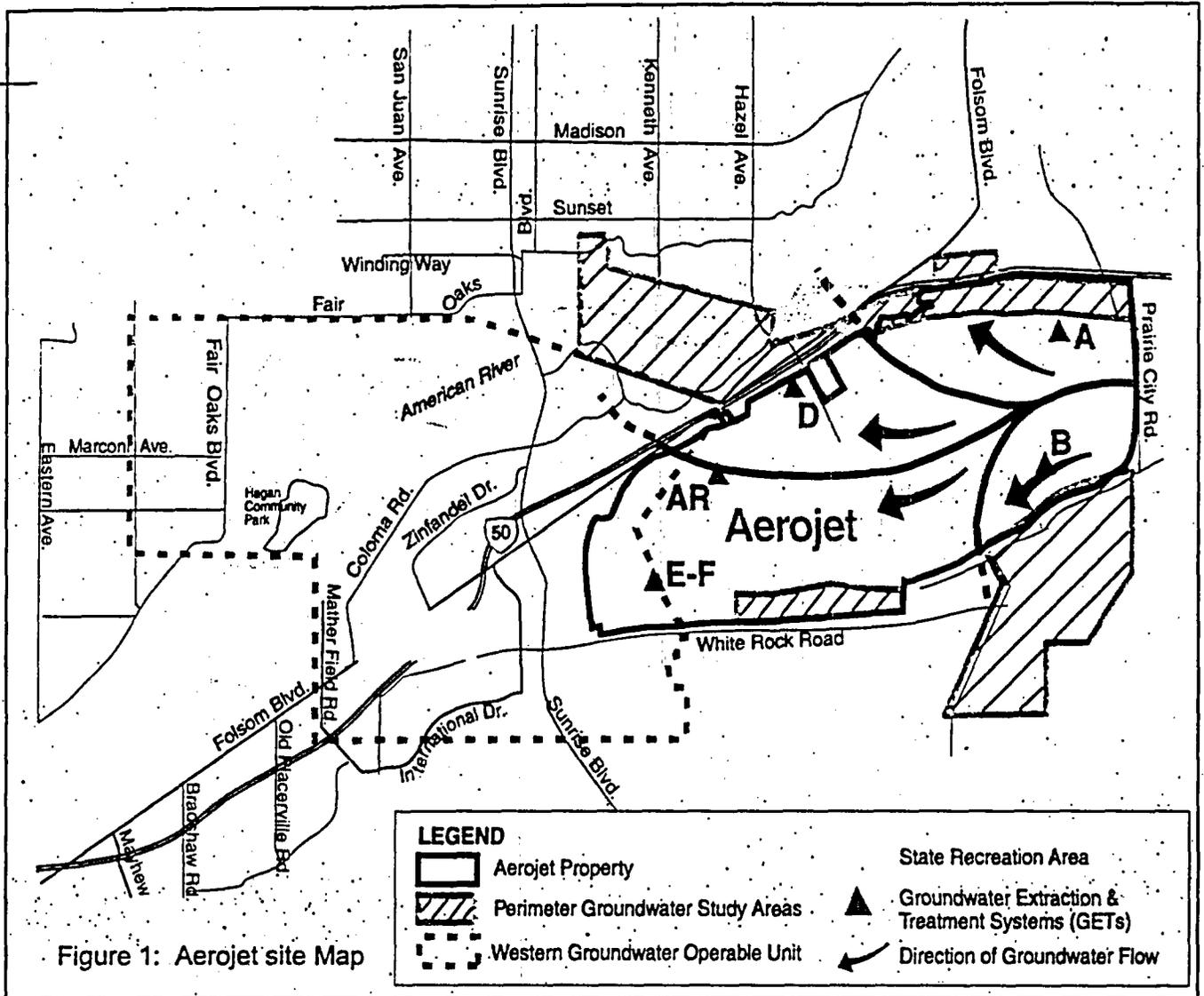
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Community Involvement in Cleanup Decisions

Safe and affordable drinking water and clean and sustainable groundwater supplies are critical to the well-being of the greater Sacramento area. However, in past decades, chemical disposal practices at several sites in the area have contaminated groundwater with various chemicals. A major challenge for the U.S. Environmental Protection Agency (U.S. EPA) is the contamination of groundwater and soil at the Aerojet General Corporation facility in Rancho Cordova, California. The U.S. EPA is working with State and local agencies to oversee the investigation and cleanup of the contamination and ensure that the area's water supplies remain safe and available.

As the U.S. EPA works to address the Aerojet site, we want to stay in touch with the community of people affected by our work. This community includes people who live nearby and may have health concerns related to the contamination. It includes residents whose quiet neighborhoods are disturbed by construction projects related to the cleanup. It includes customers of water agencies which must detect and avoid contaminated water. It includes businesses and utilities who might want to use treated water in the future. It includes people who may one day live in new developments on the Aerojet site. It may include you.

This community involvement plan (CIP) updates the 1993 *Community Relations Plan* for the Aerojet site (See Appendix C for site repository information). It identifies issues of interest and concern for this community, based primarily on interviews with community members conducted in October 2002 and June 2004, and describes how the U.S. EPA plans to involve community members in our work at the Aerojet site.

Communities Affected by the Aerojet Site

In 1979, routine testing found volatile organic compounds (VOCs) such as trichloroethylene (TCE), perchloroethylene (PCE), 1,1-dichloroethane, 1,1,2-trichloroethane, carbon tetrachloride, and vinyl chloride near the Aerojet property. VOCs are organic (carbon-containing) compounds that vaporize easily at room temperature. They are commonly used in dry cleaning, metal plating, machinery degreasing, paint stripping and as industrial solvents. Soils are contaminated with VOCs, perchlorate and metals including arsenic, beryllium, cadmium, chromium, cobalt, copper, lead, nickel and zinc. Follow-up groundwater monitoring detected perchlorate and N-Nitrosodimethylamine (NDMA), chemicals associated with rocket fuels. In the years since, the plume of contamination has spread and now affects several nearby public drinking water supply wells and impairs use of the local groundwater basin. (Appendix A provides a brief history of the Aerojet site.)

Several Sacramento County communities located near the Aerojet site are affected by groundwater contamination. These include Rancho Cordova, Gold River, Carmichael, Fair Oaks, and Folsom (Figure 2). Without intervention, the groundwater contamination from the Aerojet site has the potential to affect areas downgradient into Sacramento. The main plume of contamination underlies the recently incorporated City of Rancho Cordova and the adjacent unincorporated area of Gold River. Smaller plumes extend north of the American River beneath residential neighborhoods of Carmichael and Fair Oaks. The city of Folsom abuts the northeastern end of the Aerojet property. These communities have a mix of commercial and residential areas and some industrial land uses, mainly in Rancho Cordova. According to census data Rancho Cordova has more people of younger

ages (Table 1), more people of different ethnic backgrounds (Table 2) and language skills (Table 3), more people per household on average (Table 4), and a lower median income than communities to the north (Table 4).

Two of the communities near the Aerojet site, Rancho Cordova and Folsom, have been growing rapidly in recent years, and a new light-rail line along Folsom Boulevard on the northern border of the Aerojet property passes through Rancho Cordova on its way into Folsom. Development has concentrated on office parks and single-family housing. Large new housing developments are underway in Rancho Cordova southwest of the Aerojet

called Easton for the northern tier, including some property where possible soil contamination must be addressed.

Aerojet is also planning to develop the western "carve-out" area (Figure 3 maps these developments.). These developments will need reliable, safe drinking water supplies, raising concerns about the cumulative effect of groundwater treatment systems for the several plumes of contamination in the area.

The U.S. EPA believes it is important to the community members in the Sacramento County to help make decisions about how to clean up the Aerojet Superfund site. In 2001,

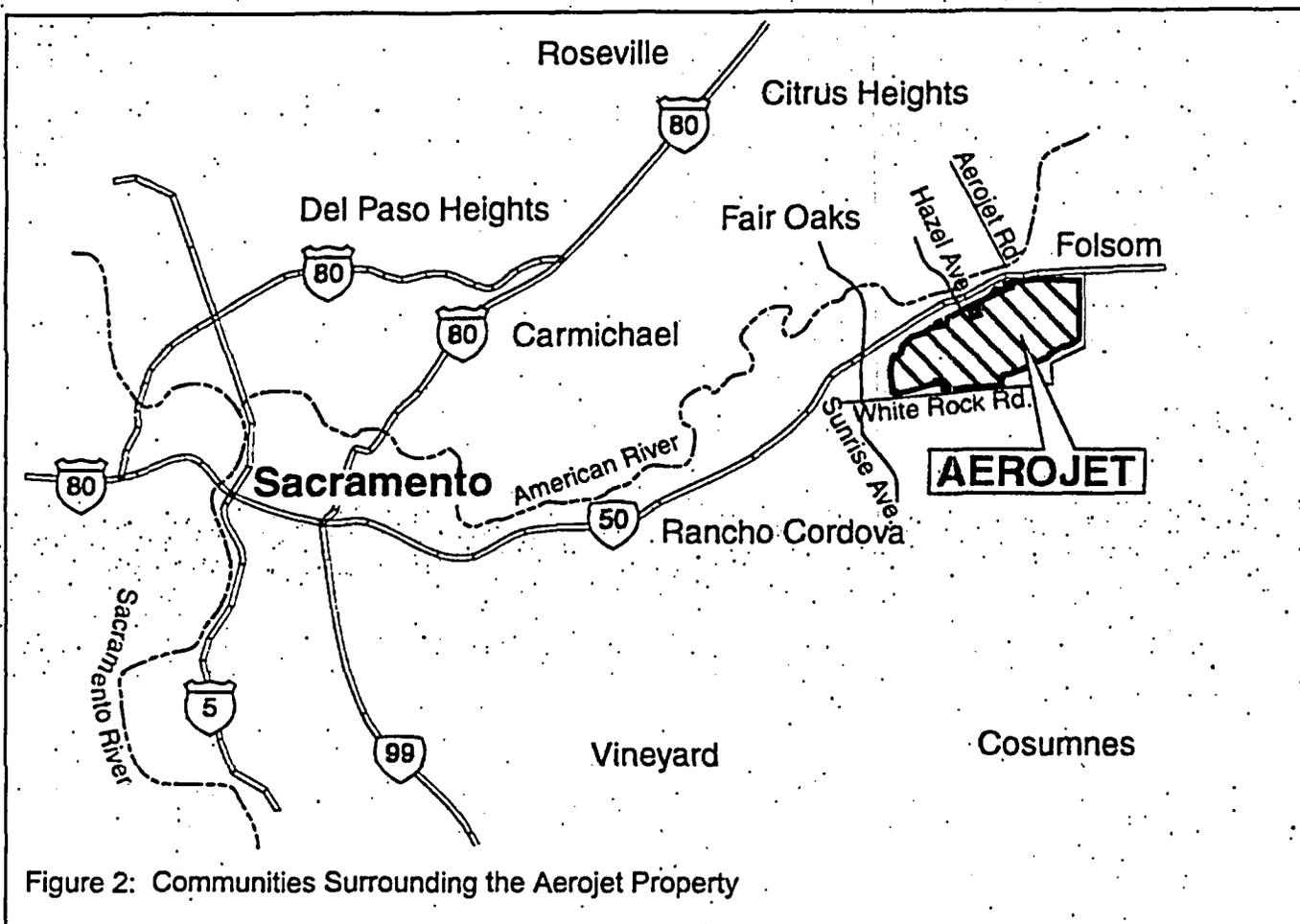


Figure 2: Communities Surrounding the Aerojet Property

property. Folsom is now considering development south of Highway 50 at the eastern end of the Aerojet property. On the Aerojet property itself, Aerojet has proposed a combined residential/commercial development

the Aerojet Community Advisory Group (CAG) was formed and represents diverse concerns of the community who exchange information with U.S. EPA and other regulatory agencies charged with cleaning up

the site. The CAG has been active in the following ways:

- Conduct meetings regularly since 2001
- Select speakers to present on a range of issues regarding hazardous waste to the CAG
- Conduct regular outreach to newspapers
- Encourage the community to attend meetings
- Participate in Water Forum meetings and encourage Water Forum involvement

The Aerojet CAG has been helpful in discussing and commenting on the recent Western Groundwater Record of Decision and will continue to do so as other cleanup actions are addressed. In addition, the Aerojet CAG is working with U.S. EPA to develop additional reader friendly materials to acquaint people with this very complex site. The Aerojet CAG meets six times a year and to become a member, please see page 22 for a U.S. EPA contact.

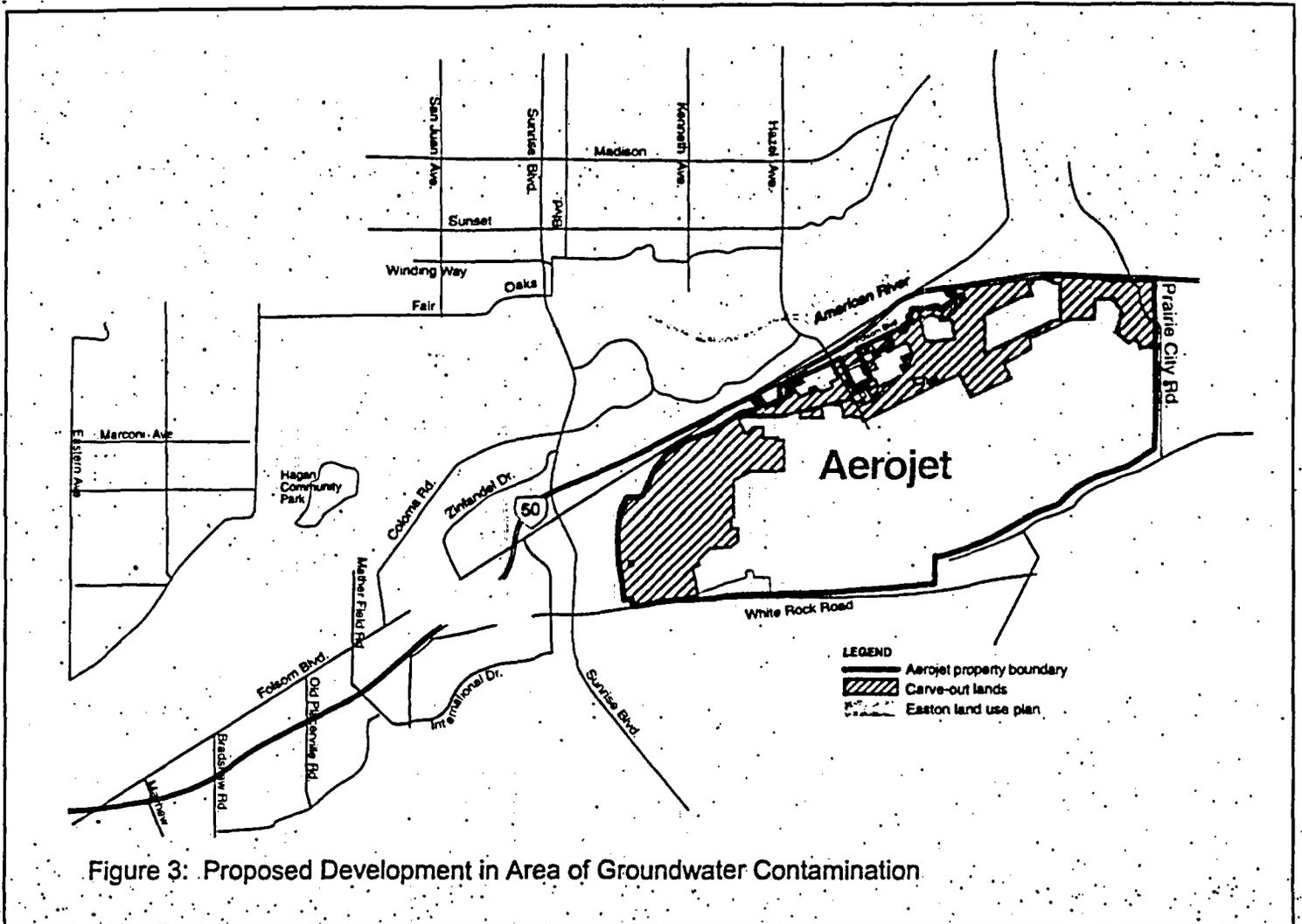


Figure 3: Proposed Development in Area of Groundwater Contamination

Regional Demographic Data

Table 1: Population and Age

	Total Population	Median Age	Under Age 5	Over Age 65
Rancho Cordova	55,060	31.9	8.1%	10.1%
Gold River	8,023	43.1	443	1,113
Carmichael	49,742	40.0	2,693	8,485
Fair Oaks	28,008	41.2	1,440	3,859
Folsom	51,884	35.9	3,591	4,569
Regional Total	192,717	38.4	12,635	23,594
Regional Total %	100%		6.6%	12.2%

Table 2: Ethnic Background

	White	Black	American Indian	Asian	Pacific Islander	Latino	Two or More Races	Other
Rancho Cordova	66.7%	6,245	521	4,537	300	7,100	3,602	3,151
Gold River	79.2%	103	21	1,219	11	327	227	85
Carmichael	86.6%	1,338	412	1,780	136	3,479	1,952	1,041
Fair Oaks	88.0%	514	165	1,182	44	1,767	945	499
Folsom	77.9%	3,109	302	3,731	100	4,914	1,781	2,446
Regional Total %	78.5%	5.9%	0.7%	6.5%	0.3%	9.1%	4.4%	3.7%

Table 3: Language Spoken at Home

	Population Age 5 and older	English	Speak English Less Than "Very Well"			
			Total - Other than English	Spanish	Indo-European	Asian / Pacific Island
Rancho Cordova	50,130	37,363	7,230	1,940	3,604	1,681
Gold River	7,837	6,146	515	85	91	275
Carmichael	47,150	41,366	2,475	648	1,283	496
Fair Oaks	26,486	22,906	1,507	274	876	302
Folsom	48,444	41,976	1,746	646	471	600
Regional Total	180,052	149,757	13,473	3,593	6,325	3,354
Regional Total %		83.2%	7.5%	2.0%	3.5%	1.9%

Table 4: Household Size, Type and Income

	Average Household Size	Median Household Income	Total Housing	Owner Occupied	Renter Occupied	Vacant
Rancho Cordova	2.68	\$40,095	21,584	10,056	10,351	1,177
Gold River	2.51	\$92,028	3,275	2,834	346	95
Carmichael	2.36	\$47,041	21,383	11,717	8,914	752
Fair Oaks	2.47	\$63,252	11,461	7,864	3,339	258
Folsom	2.61	\$73,175	17,968	13,124	4,072	772
Regional Total	2.53	\$63,118	75,671	45,595	27,022	3,054
Regional Total %			39.3%	23.7%	14.0%	1.6%

Community Involvement with the Aerojet Site

Community interest in the Aerojet cleanup rises and falls in different communities depending on current conditions and activities at the Aerojet site. Citizen concerns regarding access to information on the Aerojet site and the siting of wells and treatment plants prompted regulatory agencies to hold public meetings in 1983, 1986, 1992, and 1995, and to brief stakeholders and elected officials on the status of the Aerojet site. (For more on the early history of Aerojet site activities and community involvement, see the *Community Relations Plan: March 1993* for the Aerojet General Corporation site, located in the Aerojet site information repositories (see Appendix C for locations),

More recently, the public has participated in regulatory activities through periodic large meetings and through the on-going Community Advisory Group (CAG) for Aerojet Superfund Issues. The U.S. EPA held two hearings in the winter of 2000/2001 on the Proposed Plan to clean up the plume of groundwater contamination to the west of the Aerojet property and to ensure continued, safe water supplies for area residents. Stakeholders and members of the public commented extensively both in person and in writing. After these public hearings, the U.S. EPA signed a Record of Decision (ROD) in July 2001 to formally approve the cleanup plan for this area of the Aerojet site, called the Western Groundwater Operable Unit. Partly in response to the concerns expressed, the ROD provides for both long- and short-term contingency plans for replacing drinking water supplies lost to contamination. However, the U.S. EPA was unable to reach a legal agreement with Aerojet to implement the Western Groundwater ROD. Instead, the U.S. EPA issued an order to Aerojet in August 2002 for this purpose, and Aerojet has now

begun installing wells, pipelines, and treatment systems in a first phase of this effort.

To provide a vehicle for regular communication among a variety of community interests, the U.S. EPA held a meeting in March 2001 to convene a CAG for the Aerojet site. The CAG has been meeting regularly since then to discuss the status of the cleanup.

Later in 2001, the regulatory agencies and Aerojet agreed to modify the legal agreement with Aerojet to redefine the Aerojet site's boundaries and to subdivide the Aerojet site into Operable Units (OUs) for better management of the cleanup. The State of California's Central Valley Regional Water Quality Control Board (RWQCB) held a well-attended hearing at which many members of the public commented on the modification. A judge approved the changes in 2002.

Concerns rose again in 2004 as groundwater sampling data showed a new plume of contamination extending northwest under the southern edge of Carmichael. Data from newly installed monitoring wells indicate that this plume is not migrating rapidly and the contamination has not reached the public drinking water supply wells in Carmichael, although the Carmichael Water District is currently planning for this possibility. The Carmichael Water District organized a Town Hall meeting for Carmichael residents in June 2004 at which the regulatory agencies, Aerojet, and the water district gave presentations.

From 1985 to 2003, the U.S. EPA distributed fact sheets on each major issue as it rose to the Aerojet site mailing list that included residents of the Rancho Cordova and Gold River areas. In 2004, the U.S. EPA expanded the mailing list to include residents from Carmichael, Fair Oaks, and Folsom. The U.S. EPA plans to continue distributing fact sheets and meeting with the CAG and with other community groups to exchange information on mutual concerns. For a list of fact sheets distributed, see Appendix B. To review past fact sheets, go to the following web page to find Aerojet: <http://yosemite.epa.gov/r9/sfund/overview.nsf/>

Community Concerns

In 2002 and again in 2004, the U.S. EPA invited members of the community to provide their views about the U.S. EPA's work on the Aerojet site for this plan. Interviewees who accepted the invitation were affiliated with a range of community interests, including churches, water purveyors and water oversight agencies, environmental and other non-governmental organizations, the Chamber of Commerce, the county Office of Education, cities and civic organizations, and private citizens (See Appendix E for the list of affiliations.).

The interviews consisted of about a dozen questions designed to elicit information on the interviewees' knowledge of the Aerojet site and on their concerns about the Aerojet site and the U.S. EPA's work on it. This section summarizes the interviewees' concerns, roughly in order of the level of concern expressed as indicated by the number of times a concern was mentioned or the importance the interviewees attached to that concern.

The interviews also solicited opinions on the best methods of involving the community in the Aerojet site. The majority of interviewees identified fact sheets as the most effective method of distributing information about the Aerojet site. Electronic mail was the interviewees preferred form of correspondence with regard to updates on remedial progress, cleanup status, and public meetings. Water agency representatives suggested that the U.S. EPA coordinate outreach activities with any meetings or events sponsored by the Water Forum and affected water agencies and districts.

The follow topics are summations from the interviews conducted:

Contaminant Plume Movement

The majority of 2002 and 2004 interviewees, especially water agency representatives in the aftermath of the May 2004 announcement of the detection of a previously unknown NDMA plume north of the American River, were concerned about the direction and rate of movement of the contaminant plume. All 2004 interviewees were aware of the recently detected plume and identified that as one of their primary concerns (i.e., the river is not a barrier and the plume is migrating to the north). Water agency interviewees requested better information in the future about plume migration, to better enable them to determine which drinking water wells might be affected. Interviewees were concerned that the U.S. EPA had not made significant progress to stop the groundwater contamination from migrating and that the location of the plume has not been well defined. As one water agency representative put it, "There is an immediate need to completely contain the groundwater contamination and to understand its nature and extent as additional water supply wells are impacted." Water agencies also expressed concerns regarding potential competition between pumping for municipal water supply and pumping to clean up contamination, and possibility that different entities extracting groundwater from and injecting water into the basin could affect the direction and speed of plume movement. "Since the groundwater flow dynamics are not yet fully understood and predictable, competing extraction activities could cause the contamination to shift and negatively impact the water quality at any time," this [or another] interviewee said.

Water Supplies

The majority of the 2002 and 2004 interviewees shared a concern regarding the cost to the community of the loss of clean drinking water supplies due to contamination from the Aerojet site. Community members believe that Aerojet, as the entity that caused contamination and loss of drinking water wells, should replace that amount of drinking water so that the community doesn't suffer from curtailed supplies or higher water costs. Members of the public expressed the belief that Aerojet should use its existing water rights to replace contaminated water supplies for existing residents before using it for new development.

New information on the "movement" of the plume across the American River increased these concerns, as the quality of water in additional supply wells appeared threatened. This continued loss of water supply is of concern because the region relies heavily on the groundwater to supply communities with water during the dry season, when little surface water is available. As a water agency interviewee stated, "The region cannot afford to lose any more wells if there continues to be a 100% reliance on the groundwater supply as there are limited options for alternate sources of water and lack of funding and infrastructure to address this issue." Water quality issues were raised in several interviews, but all participants were aware that water is tested before distribution and that drinking water supplies are considered safe.

Approach to Cleanup and Rate of Progress

Several interviewees were concerned about the seemingly slow rate of progress on cleanup and the unknown length of time to completion. "The groundwater plume has been there for decades," one interviewee said, "and the efforts to extract and treat the plume, especially in the western area, have not been successful or satisfactory." Interviewees were interested in receiving more frequent updates from the U.S. EPA and Cal/EPA's Department

of Toxic Substances Control (DTSC) and RWQCB on Aerojet site activities. They wanted to see more efforts made to protect the beneficial uses of municipal and industrial water supplies.

In addition, several of the 2004 interviewees suggested that responsibility for cleanup is fragmented among the different contaminated sites in the area and among State and federal regulatory agencies, and that the agencies need to coordinate and plan their efforts better. As an interviewee stated, "Cleanup should be addressed on a more holistic and regional approach. It would be better to forecast where the contaminant plume is migrating rather than plume chasing."

Impacts to Groundwater Basin

Several of the 2004 interviewees represented agencies that have signed the Water Forum agreement on the management of basin-wide water resources. These people were concerned about potential effects of contamination and cleanup on the entire groundwater basin and, in turn, on the Water Forum agreement, which includes a water budget of which the region's groundwater supply constitutes a substantial portion. Their concerns include how the loss of supply wells and groundwater to contamination affects the regional water supplies, the groundwater balance in the basin, future use of the groundwater, and future senior water rights. "If the current situation does not change, the water will continue to be extracted, treated, and discharged to the River," according to one Water Forum representative. "If this continues, the safe [groundwater] yield for the basin will not be met." Under this scenario, the current groundwater pumping rates exceed the basin's ability to recharge, not allowing the basin to recover from the depression in water levels. Meeting water supply demands of growing communities in the dry season will become more challenging as groundwater becomes less available, so all parties need to work to replenish the groundwater basin.

Water Diversions

A few of the 2004 interviewees expressed a related concern with potentially discharging groundwater into surface waters (e.g., the American River) before the region can re-use the water. Such discharges could affect the valley drainage program and, as mentioned above, the water supply budget and groundwater availability. One interviewee was "opposed to these diversions when the water can and should be used for other purposes in the impacted communities." Interviewees wanted to know who will own the treated, discharged water and where it would be discharged.

Other concerns arising from the potential discharge of treated water into surface waters involved both the quality and quantity of American River water. As the interviewee stated concisely, "Discharging groundwater into receiving waters may impact the temperature of the water and the ability to sustain fish. In addition, importing water to communities to serve as an alternate water supply will take away water necessary to sustain the fisheries."

Property Values

Another concern discussed in several 2002 interviews was Aerojet's proposal in 1992 to install a groundwater monitoring well on residential property in the Curragh Downs neighborhood of Fair Oaks. Residents were concerned about a possible reduction in property values if a monitoring well resulted in controversy and media attention. Although locating this well on County property has since resolved this specific issue, local residents remain concerned about future well sitings. Similarly, several 2004 interviewees expressed their general concern for the potential decrease in property values.

Land Use Conflicts

Some of the 2002 and 2004 interviewees mentioned concern about potential land use conflicts if development were allowed to occur near the Aerojet site. These

interviewees suggested the regulatory agencies should keep the appropriate city and county agencies and officials informed of Aerojet activities, so that approval of any future development would occur with full knowledge about the nature and extent of the contamination.

Tools for Involvement

This plan identifies four sets of tools for involving the community in the U.S. EPA's work at the Aerojet site. These tool sets conform to the U.S. EPA's four objectives for community involvement: to plan for public participation, to facilitate interaction among communities and agencies, to provide accurate and timely information to the public, and to support the understanding of technical information so that communities can participate knowledgeably.

As work on the Aerojet site progresses, the U.S. EPA will evaluate our effectiveness in meeting the public's communication needs. We encourage community members to identify specific activities or tools that will enhance your awareness of Aerojet site issues and interaction with responsible agencies. The U.S. EPA will make additional services available to persons with special needs. Please contact one of the representatives listed on page 22 for these additional services.

The objectives and proposed activities of this community involvement plan are:

1. Planning

The U.S. EPA will use the following tools to identify the affected communities and key stakeholders, determine their concerns and needs, and to establish regular and open communication

Community interviews: The U.S. EPA conducted 9 community interviews in 2002 and 20 in 2004. Interviewees included a

cross-section of community representatives, including environmental and public interest groups, business owners, residents, local government, and water agencies.

Community involvement plan (CIP): The U.S. EPA will record the results of community interviews and our plan for addressing community concerns in a CIP. We will make the plan available to affected communities for reference and comment.

Statutory requirements: The U.S. EPA will coordinate remediation and community involvement efforts to ensure that we meet all statutory requirements regarding public notice and public comment.

Evaluation of the effectiveness of community involvement: The U.S. EPA will collect feedback on public outreach by letter, e-mail, fax, and phone, at meetings and presentations, and at work sites. U.S. EPA will update the Community Involvement Plan when needed to incorporate the feedback.

2. Interaction

U.S. EPA will use the tools below to provide opportunities for public participation that will incorporate community concerns into site decision-making.

Community Advisory Group (CAG): The U.S. EPA will continue to meet regularly with the CAG for Aerojet Superfund Issues to provide updates on cleanup efforts, issues, and progress. A CAG is an organization of local stakeholders and affected community members who volunteer to organize and participate in periodic meetings with regulatory agencies regarding a Superfund site. These meetings are designed to serve as an on-going forum for information exchange among the local community, the U.S. EPA, State agencies, and other pertinent agencies involved in the cleanup of the Aerojet site.

Interactive meetings: The U.S. EPA's project team will hold informational meetings and availability sessions at significant project milestones or when issues arise that may require public attention. To discuss new developments on the investigation and cleanup

as well as to keep current on community issues and concerns, project team members will:

- **Meet with interested community organizations** and individuals on request, as scheduling allows.
- **Make presentations upon request for interested community organizations** and local governmental agencies at their regularly scheduled meetings.

Contact information: The U.S. EPA's project staff will be available to answer questions and address any comments by phone, mail, and e-mail. Please see contacts on page 22.

3. Outreach

The U.S. EPA will use the tools below to provide consistent, regular, and timely information about the investigation, cleanup plans, and remediation activities.

Coordination with water suppliers: Distribute information to water suppliers about specific activities and findings that directly affect them, enabling them to make informed responses to customer inquiries and provide feedback to the U.S. EPA.

Site-related documents: Make work plans, sampling results, and reports available for public review after internal review. Maintain important documents at the established local repositories at the information repositories (see page 20) and on the U.S. EPA website, as well as at the U.S. EPA Region 9 Superfund Records Center.

Document design: Design documents to be readily usable by the intended audience, especially the general public. Use plain language and graphics appropriate for the local community.

Fact sheets and newsletters: Distribute fact sheets and newsletters via the mailing list and make them available at the information repositories and other public locations. Fact sheets will explain the purpose of site-related activities, identify effects on and benefits to

the community, and provide a toll-free phone number for further information.

Outreach to targeted populations: Translate pertinent information depending on language need and interest.

E-mail updates: Provide periodic updates on Aerojet site activities via e-mail to those parties who expressed willingness to distribute information to their constituent mailing lists. The U.S. EPA will develop and maintain an e-mail group list for this purpose. To be placed on this e-mail group list, contact the U.S. EPA on page 22.

Internet: Maintain a project web site where Aerojet site documents will be available for viewing. Web addresses include:

<http://yosemite.epa.gov/r9/sfund/overview.nsf> (Superfund site overviews).

<http://www.epa.gov/region09/waste/sfund/index.html> (the Superfund site-specific documents page).

<http://www.epa.gov/region09> (U.S. EPA Region 9 home page)

<http://www.epa.gov> (U.S. EPA Headquarters home page)

Web pages and technical documents are in English only, but some project information, such as fact sheets, may be posted in other languages. The U.S. EPA will also coordinate with organizations that extend offers to link their website to the U.S. EPA website.

News media: Share timely and accurate project news through mass media outlets. To the extent feasible, the U.S. EPA may distribute information through cable television and radio stations, and, if appropriate, print media. See page 23 for local media outlets.

Project mailing list: Develop and maintain a mailing list for distributing printed information. To get on the Aerojet site mailing list, please send a request by e-mail, phone, or mail to the U.S. EPA (see page 22 for contact information). The Aerojet mailing list included approximately 20,000 contacts.

Aerojet CAG contact list: Maintain the CAG contact listing for distributing its agenda,

meeting minutes and site information. To get on the Aerojet CAG contact list, please send a request by e-mail, mail or phone to U.S. EPA (see page 22 for contact information).

4. Support

The U.S. EPA will assist the community with technical and grant resources to help citizens understand and comment about site-related information.

Logistical support for CAG: Provide note-taking and other support for periodic CAG meetings.

TOSC: Coordinate support for the community from the Technical Outreach Services for Communities (TOSC) program, which provides independent technical advice to community groups on specific issues regarding hazardous waste sites affecting their community.

TAG: Offer Technical Assistance Grant (TAG) funds. TAG funds allow community groups to hire an independent technical advisor to explain the U.S. EPA documents and data, and to communicate community concerns to the U.S. EPA.

Future Community Involvement Activities

Community members have suggested ways the U.S. EPA can effectively keep you informed or involved in the cleanup process to achieve the objectives of this plan. As a result of community concerns, we have identified public outreach activities that will help satisfy the goals of this plan. In Figure 4 on the following page, you will find the initial action plan. This plan will change as we learn more about the Aerojet site through continuing investigations.

Figure 4: Community Involvement Action Plan

Milestone	Approximate Time Period	Community Involvement Actions
	Ongoing	Support Community Advisory Group
Perimeter Unit		
RI/FS report	February 2005	Place draft report in Records Center Provide draft report to CAG for review
Proposed Plan released	September 2005	Distribute Proposed Plan to mailing list Notify of public comment period Hold public hearing Make transcript available
Record of Decision signed	January 2006	Develop written response to comments Include responsiveness summary in ROD Distribute newsletter on final provisions and signature
Consent Decree approved	January 2007	Mail announcement of comment period Respond and file comments with District Court
Boundary Unit		
RI/FS report	August 2008	Place draft report in Records Center Provide draft report to CAG for review
Proposed Plan	August 2009	Distribute Proposed Plan to mailing list Notify of public comment period Hold public hearing Make transcript available
Record of Decision signed	August 2010	Develop written response to comments Include responsiveness summary in ROD Distribute newsletter on final provisions and signature
Consent Decree approved	August 2011	Mail announcement of comment period
Island Unit		
EE/CA report for interim groundwater extraction system	August 2007	Distribute fact sheet Hold public comment period and meeting
RI/FS report (soil)	August 2010	Place draft report in Records Center Provide draft report to CAG for review

Milestone	Approximate Time Period	Community Involvement Actions
Proposed Plan	February 2011	Distribute Proposed Plan to mailing list Notify of public comment period Hold public hearing Make transcript available
Record of Decision	August 2011	Develop written response to comments. Include responsiveness summary in ROD Distribute newsletter on final provisions and signature
Consent Decree	August 2012	Mail announcement of comment period Respond and file comments with District Court
Central Unit		
TBD	TBD	Similar to other operable units
Area 41 (Cavett Ranch)		
TBD	TBD	Similar to other operable units
Eastern Unit		
TBD	TBD	Similar to other operable units

Appendix A: Aerojet site Background

Location

The Aerojet General Corporation property covers 8,500 acres of the American River flood plain on the eastern border of Rancho Cordova; 15 miles east of Sacramento (see Figure 1). The northeastern edge of the property is about ½ mile from the American River and the closest residence is 500 feet from the property line. Offices and industrial buildings on the property provide space for 2,000 employees of Aerojet and other entities. Rancho Cordova, including the Gold River area, has a population of approximately 63,000. Nearby communities affected by the Superfund site include Carmichael (population 50,000) and Fair Oaks (population 28,000) to the north, Folsom (population 52,000) to the northeast, the Cosumnes area of unincorporated Sacramento County to the east and southeast, and the Mather and Vinyard areas to the south and southwest.

Extensive 40 to 100-foot-deep dredge tailings from past gold mining operations form the topography of much of the property. A multi-layer groundwater aquifer underlies the Aerojet site. Groundwater from wells throughout the Rancho Cordova area supply: municipal, domestic, industrial and some irrigation water. The American River is also used for public water supplies. Lake Natoma downstream of Folsom Dam on the American River and nearby Alder Creek are used for recreational activities.

Contamination

Since 1953, Aerojet and its subsidiaries have manufactured liquid- and solid-propellant rocket engines and a number of agricultural, pharmaceutical, and other industrial chemicals. These companies disposed of hazardous waste chemicals, including

trichloroethylene (TCE) and other chemicals associated with rocket propellants, as well as various chemical processing wastes, in surface impoundments, landfills, deep injection wells and leachate fields, and by open burning.

In 1979, TCE and other volatile organic compounds (VOCs) were found in private wells off the Aerojet property. In October 1981, the U.S. EPA proposed the Aerojet site for inclusion on the National Priorities List (NPL), a national inventory of hazardous waste sites that are eligible for cleanup under the federal Superfund law. Additionally, VOCs were detected in the American River in 1983. Perchlorate, a component of solid rocket fuel, was found in off-property drinking water wells at levels above the provisional health-based standard in January 1997. In the years since, contamination has closed 14 public and private drinking water supply wells. Under State oversight, water suppliers and Aerojet, continue to monitor drinking water supplies to assure compliance with drinking water standards.

In June 2003, Aerojet sampled groundwater within the vicinity of the American River, at that time, what was thought to be above the northern edge of the known contaminate plume to investigate a potential site for a new drinking water well to replace wells already lost to contamination. Analysis revealed that the groundwater is contaminated with n-nitrosodimethylamine (NDMA), TCE, and perchlorate. Further sampling of existing wells showed that the NDMA plume extends northwest underneath the American River and below the southern edge of Carmichael. The source of this plume may be potentially due to past discharges via Buffalo Creek into former sand-mining pits just south of the river, northwest of the Aerojet property. To date, the contamination has not reached the public drinking water supply wells in Carmichael.

Cleanup Approach

In 1988, the U.S. EPA, the DTSC, RWQCB, and Aerojet completed negotiations on Remedial Investigation/Feasibility Study (RI/FS) activities at the Aerojet site. The settlement is embodied in a legal document

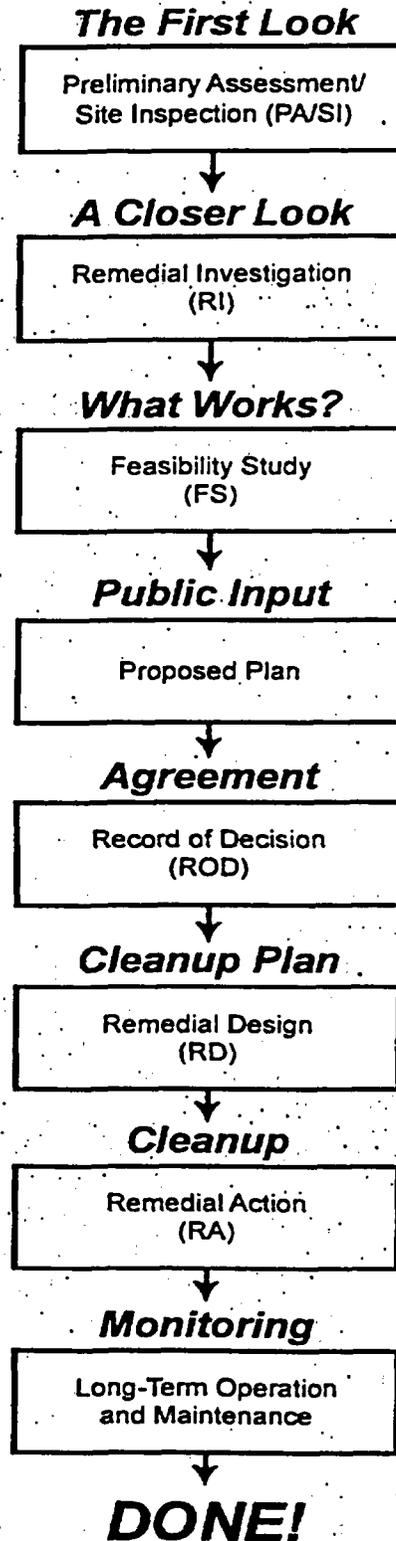
called a Partial Consent Decree (PCD), which was entered into legal record on June 23, 1989. This decree directed the activities that Aerojet was required to perform at the Aerojet site. The PCD for the RI/FS was modified on April 15, 2002 to allow the Aerojet site to be divided into Operable Units (OUs). An RI/FS is a two-stage process to determine the cleanup actions necessary for a site. The first phase, called the remedial investigation (RI), determines the type and amount of contamination at the Aerojet site. The second phase, called the Feasibility Study (FS), identifies and evaluates options for cleaning up the contamination at the Aerojet site. At the completion of the RI/FS, the U.S. EPA proposes a plan to clean up the contamination. See Figure 5 for Superfund investigation and cleanup process information.

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), then remediate soil and groundwater on the property (at least 4 OUs). Dividing the Aerojet site into OUs will allow Aerojet and the regulating agencies to prioritize investigation and cleanup work and accelerate cleanup.

Cleanup Efforts

Under oversight by the U.S. EPA, DTSC, and RWQCB, Aerojet began the RI/FS process by investigating the nature and extent of groundwater and soil contamination throughout the site in 1979. The first phase of the investigation gathered available information and addressed soil and groundwater; it was completed in 1994. The second phase of investigation includes further sampling, treatability studies, and groundwater treatment technology evaluations.

The Superfund Process



Community Involvement activities occur throughout the entire Superfund Process.

Figure 5: Superfund Process

Between 1983 and 1987, to control VOC contamination, 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 Aerojet property (see Figure 1). The American River extraction and treatment (AR-GET) 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 groundwater 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.

Aerojet is currently studying a cleanup method called "in-situ bioremediation" that uses naturally occurring microbes to break down contaminants in place, to determine if it is practical and economical to destroy perchlorate in the groundwater and soil. Meanwhile, both state and federal government scientists continue work to set standards for safe levels of perchlorate in the environment.

Environmental Progress

The five interim groundwater extraction and treatment systems currently in operation at the Aerojet General facility are reviewed for effective boundary control of groundwater contaminants. The Western Groundwater OU (WGOU) will contain the contaminated groundwater on the western side of Aerojet and eventually restore the aquifer. Three extraction wells are currently treating contaminated groundwater. It is anticipated that will increase to 14 extraction wells by the end of 2005 and 23 by the end of 2006. Recommendations for control of groundwater contamination north of the American River were submitted December 22, 2004. Under the Unilateral Administrative Order that the U.S. EPA issued to Aerojet on August 8, 2002 to compel construction of the Western Groundwater remedy, Aerojet will continue to publish a notice to the public annually, showing the current maximum extent of groundwater contamination in the Western Groundwater Operable Unit. The RI/FS for the Perimeter Groundwater OU covering the north, east, and south boundaries is to be submitted to the U.S. EPA by February 15, 2005.

Figure 6: Aerojet Site History Timeline

- 1979 – Began Phase 1 of the RI.
- 1979 – Detected VOCs (including TCE) in private off-property wells.
- October 1981 – U.S. EPA proposed Aerojet site as an NPL site.
- 1983 – Detected VOCs in the American River.
- 1983 to 1987 – Installed GETs A, B, C, D, E, and F.
- 1988 – U.S. EPA, DTSC, RWQCB, and Aerojet completed negotiations on the RI/FS activities.
- June 23, 1989 – PCD for the RI/FS entered into legal record.
- 1994 – Completed Phase 1 of the RI.
- January 1997 – Detected perchlorate in off-property drinking water wells at levels above the provisional health-based standard.
- 1998 – Added AR-GET system.
- 1999 – Combined GETs E and F.
- July 2001 – U.S. EPA signed a ROD to formally approve the cleanup plan for the WGOU
- 2002 – Expanded GETs E and F.
- April 15, 2002 – A modification to the PCD for the RI/FS allowed the Aerojet site to be broken into OUs.
- August 8, 2002 – U.S. EPA issued Unilateral Administrative Order to Aerojet.
- June 2003 – Detected NDMA, TCE, and perchlorate above what was thought to be the northern edge of the contaminant plume.
- 2004 – Found NDMA plume to extend underneath the American River and below the southern edge of Carmichael.

Appendix B: Published Outreach Documents

Newsletters and Fact Sheets:

EPA, State and Aerojet Settle on an Investigation and Clean-up Plan, January 1986

Agreement Signed – EPA, State and Aerojet Sign Agreement to Study Contaminated Site and Develop Cleanup Alternative, September 1988

Agreement Approved by Court, 1989

Announce Two Reports on Aerojet – March 1990

Update on Activities, May 1992

Removal Action and Public Comment (north of Aerojet's property from the Hazel Avenue/Folsom Boulevard interchange), July 1993

Extension of Public Comment Period (Removal: American River Study Area), September 1993

EPA/State Approve Removal Action (north side of American River), August 1994

2nd Community Meeting Scheduled for Aerojet General Corporation (Discuss implementation of removal action for American River Study Area), June 1995

Opportunity to Comment on Proposed Groundwater Treatment Locations (Removal Action for American River Study Area), September 1995

States Take Lead for American River Study Area, November 1995

Region 9 Perchlorate Update, June 1999

U.S. EPA Announces Public Comment Period on the Proposed Plan for Aerojet Superfund Site – Western Groundwater Operable Unit, November 2000

EPA Proposes a Plan to Address Groundwater Contamination in Western Area of Aerojet, November 2000

U.S. EPA Announces Second Public Meeting for Comments on the Proposed Plan for Aerojet Superfund Site's Western Groundwater Operable Unit, January 2001

The United States Environmental Protection Agency (EPA) Proposes the Formation of a Community Advisory Group, February 2001

Government Agencies Seek Public Comment on Changes in Legal Agreement, September 2001

Edge of Groundwater Contamination Plume Appears in Carmichael, May 2004

Western Groundwater Cleanup: 2004 Progress Report, August 2004

Public Hearing Transcripts:

Western Groundwater Proposed Plan, 12/7/2000

Western Groundwater Proposed Plan, 1/17/2001

Community Advisory Group (CAG) for Aerojet Superfund Issues:

Bi-monthly CAG meeting minutes are available for March 22, 2001 through present. To attend receive announcements and meeting notes for the CAG, please contact the U.S. EPA (see page 22).

Community Involvement Plan:

1993 *Community Relations Plan* for the Aerojet site

Appendix C: Information Repositories and Public Meeting Locations

Information Repositories

Rancho Cordova Community Library
9845 Folsom Boulevard
Sacramento, CA 95827
(916) 264-2770

Contact: Tanis Groth, Reference Librarian
Hours: Monday 4p.m.-8p.m., Tuesday 1p.m.-
5p.m., Wednesday 11a.m.-6p.m., Thursday
12p.m.-8p.m., Friday and Saturday 1p.m.-
5p.m. Closed Sunday

California State University Sacramento
Library
2000 State University Drive East
Sacramento, CA 95819-6039
Contact: Ben Amata, Government Documents
(916) 278-5672
Hours: Monday - Thursday 8a.m. - 9:30p.m.,
Friday and Saturday 8a.m. - 5:15p.m.

U.S. EPA Superfund Records Center SFD-7-C
95 Hawthorne Street, Suite 4035
San Francisco, CA 94105
(415) 536-2000
Hours: Monday - Friday, 8:30a.m. - 5p.m.

Cal- EPA
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826
(916) 255-3758
Contact: Alberta McMurray, Public Records
Coordinator

Hours: Monday to Friday 8-4
Limited copying facilities available.

CAG Meeting Locations

Sheriff's Substation, Community Room
10361 Rockingham Drive
Rancho Cordova, CA 95827
(916) 875-9600

Contact Person: Don Hodge, Community
Involvement Specialist
(415) 972-3240

Public Meeting Locations

Rancho Cordova Area

Cordova High School
2239 Chase Drive
Rancho Cordova, CA 95670
(916) 362-1104
Jackie Levy, Principal
Capacity: 400 people

Mills Middle School
10439 Coloma Rd.
Rancho Cordova, CA 95670
(916) 363-6544
Dennis Willeford, Principal
Capacity: 400 people
Jay Bittner Facilities Director

Carmichael Area

Carmichael Recreation and Park District
5750 Grant Avenue
Carmichael, CA 95608
(916) 485-5322

Carmichael Elks Lodge
5631 Cypress Avenue
Carmichael, CA 95608
(916) 489-2103

La Sierra Community Center
5325 Engle Road, Suite 100
Carmichael, CA 95608
(916) 483-7826

Public Meeting Locations (continued)

Folsom / Fair Oaks

Folsom Community Center
52 Natomas Street
Folsom, CA 95630
(915) 355-7299

Fair Oaks Presbyterian Church
11427 Fair Oaks Blvd.
Fair Oaks, CA 95628
(916) 967-4784

Appendix D: Key Contacts

U.S. Environmental Protection Agency

Charles Berrey
Remedial Project Manager
U.S. EPA
75 Hawthorne Street (SFD-7-2)
San Francisco, CA 94105
(415) 972-3146 or (800) 231-3075

Don Hodge
Community Involvement Coordinator
U.S. EPA
75 Hawthorne Street (SFD-3)
San Francisco, CA 94105
(415) 972-3240 or (800) 231-3075

Jim Vreeland, Northern CA State Liaison
U.S. EPA
75 Hawthorne Street (PPA-1)
San Francisco, CA 94105
(415) 947-4298 or (800) 231-3075

Community Advisory Group Chair

Janis Heple
(530) 757-8602

California State Agencies

Ed Cargille
Cal-EPA, DTSC
8800 Cal Center Drive
Sacramento, CA 95826
(916) 255-3703

Nathan Schumacher
Cal-EPA, DTSC, Public Participation Specialist
8800 Cal Center Drive

Sacramento, CA 95826
(916) 255-3650

Alex MacDonald, RWQCB
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114
(916) 464-4625

Marilyn Underwood, DHS
1515 Clay Street, 17th Floor
12 Oakland, CA 94612
(510) 622-8602

U.S. Senate

Senator Dianne Feinstein
One Post Street, Suite 2450
San Francisco, CA 94104
(415) 393-0707

Senator Barbara Boxer
1700 Montgomery St., Suite 240
San Francisco, CA 94111
(415) 403-0100

House of Representatives

Representative Dan Lungren
District 3
722-B Main Street
Woodland, CA 95695
(530) 669-3540

Vacant
District 5

California State, County and Local Elected Officials

State Senator, District 1
Dave Cox
State Capitol
Sacramento, CA 95814
(916) 445-4251

State Assemblyman, District 9
Dave Jones
915 L Street, Suite 110

Sacramento, CA 95814
(916) 324-4676

State Assemblyman, District 5
Roger Niello
State Capitol Building, Room 5160
Sacramento, CA 95814
(916) 319-2005

State Assemblyman, District 10
Alan Nakanishi
State Capitol Building, Room 5175
Sacramento, CA 95814
(916) 319-2010

Sacramento County Supervisors

5th District Supervisor Don Nottoli
700 "H" Street, Suite 2450
Sacramento, CA 95814
(916) 874-5465

3rd District Supervisor Susan Peters
700 "H" Street, Suite 2450
Sacramento, CA 95814
(916) 874-5471

City Officials

City of Folsom
Mayor Steve Miklos
(916) 355-7271
Vice Mayor Andy Molin
(916) 355-8379
Councilmember Kerri Howell
(916) 983-0675
Councilmember Eric King
(916) 984-9286
Councilmember Jeff Starsky
(916) 355-7320
50 Natoma Street
Folsom, CA 95630

City of Rancho Cordova
Mayor Ken Cooley
Vice Mayor Robert McGarvey
Councilmember Linda Budge
Councilmember Dan Skoglund
Councilmember David Sander

3121 Gold Canal Drive
Rancho Cordova
CA 95670
(916) 942-0222

Media

Gary Reed
Environmental Editor
Sacramento Bee
2100 Q Street
Sacramento, CA 95852
(916) 321-1104

Renee Siden
Sacramento Business Journal
1400 X Street
Sacramento, CA 95818
(916) 447-7661

Shelly Blanchard
Grapevine Independent
3338 Mather Field Road
Rancho Cordova, CA 95670
(916) 361-1234

KCRA TV Channel 3
3 Television Circle
Sacramento, CA 95814
(916) 446-3333

News 10
400 Broadway
Sacramento, CA 95818
(916) 441-2345

KFBK News Radio
1440 Ethan Way, Suite 200
Sacramento, CA 95825
(916) 929-5325

KOVR TV Channel 13

2713 KOVR Drive
West Sacramento, CA 95605
(916) 374-1313

KHWD-93.7 FM
5244 Madison Avenue
Sacramento, CA 95841
(916) 338-9200

Appendix E: List of Interviewees

To develop the CIP for the Aerojet Site, the U.S. EPA interviewed 29 community stakeholders in October 2002 and June 2004. Individuals representing the following groups and interests participated in the interviews.

Armenian Church
Cal-American Water Co.
California Engineering Foundation
Carmichael Water District
Citrus Heights Water District
City of Citrus Heights
Cordova Community Planning Advisory Council (CORPAC)
Fair Oaks Water District
Friends of the River
MacKay & Soms
Nimbus Salon and Steelhead Hatchery
Rancho Cordova Chamber of Commerce
Sacramento County Office of Education
Sacramento Groundwater Authority
Sacramento Suburban Water District
Save the American River Association
Sierra Club
Slavic Community Organization/Church
Water Forum
Urban Creek Council
U.S. Private Citizens

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To develop the CIP for the Aerojet Site, the U.S. EPA interviewed 29 community stakeholders in October 2002 and June 2004. Individuals representing the following groups and interests participated in the interviews.

Armenian Church

Aerojet Community Group and Chairperson

Cal-American Water Co.

California Engineering Foundation

Carmichael Water District

Citrus Heights Water District

City of Citrus Heights

Cordova Community Planning Advisory Council (CORPAC)

Fair Oaks Water District

Friends of the River

MacKay & Soms

Nimbus Salon and Steelhead Hatchery

Rancho Cordova Chamber of Commerce

Sacramento County Office of Education

Sacramento Groundwater Authority

Sacramento Suburban Water District

Save the American River Association

Sierra Club

Slavic Community Organization/Church

Water Forum

Urban Creek Council

U.S. Private Citizens