

Meeting Notes: Community Advisory Group - Aerojet Superfund Issues, January 23, 2008

1. Attendees

Kevin Mayer (EPA), Jackie Lane (EPA), Gary Riley (EPA), Alex MacDonald (RWQCB), Chris Fennessy (Aerojet), Jean Young, Janis Heple, Mike Girard (Aerojet), Larry Ladd, Lucy Boehm (Sacramento County Water Quality Department), Jim Utterback, Tricia Carter (Recorder, CH2M HILL)

2. Approval of Meeting Minutes

The November meeting minutes were accepted as final.

3. Aerojet Community Updates: Mike Girard, Aerojet

Mike Girard noted that Aerojet met with the Rancho Cordova City Council. This will be a regular meeting beginning on February 4th.

Aerojet is also working on a Memorandum of Understanding with the Fair Oaks Water District outlining the combined effort for both parties with regard to public outreach.

Mike also noted that Aerojet received a SMUD community service award (Green Initiative).

4. Update from the September 2007 Meeting Regarding Major Milestones in OU-3 and Outside of OU-3: Kevin Mayer, EPA

Kevin noted two issues: 1) the Perimeter Groundwater Operable Unit Proposed Plan will be delayed due to the need to conduct a vapor intrusion analysis and to evaluate exposure routes (also need to look at the variability and the model's sensitivity to soil moisture), and 2) perchlorate data will become available in May from UC Davis; these samples are blood and urine samples from women of child bearing age specific to Sacramento.

5. General Aerojet Cleanup Overview: Alex MacDonald, RWQCB

Alex reviewed the following items:

- A GET L1 Construction: NO CHANGES. Facility completed and operation commenced the first week of September.
- B GET L Construction: NO CHANGES. Construction will commence Spring 2008 with the construction of the reservoir beneath the treatment facility by Carmichael Water District. Aerojet is working on the design for the facility.
- C GET KA: Final plans have been submitted to the City of Rancho Cordova in order to obtain a building permit. Construction to begin in Spring 2008. Looking at rebuilding AC-7 Georgetown Well - for use as an extraction well.
- D GET H: Boeing repaired pipeline and GET HB is treating flows from EX-1, 2, 3, and 5. GET HA was not affected by the pipeline repair.
- E GET J - adding additional UV equipment and hydrogen peroxide tank.
- F New Monitor Wells:

- i) Monitor wells to be constructed in the American River parkway near Iron Point Road. State Parks is developing the CEQA document and Aerojet has paid the requested fees.
 - ii) All initially planned Island Operable Unit monitor wells have been completed and those wells, and existing wells have been sampled. The wells are being used to refine plumes and allow for locating extraction for containing the high concentrations of solvents and perchlorate near source areas.
- E Chettenham Well Testing Continues: The concentrations of perchlorate in the well have dropped to approximately 9 ppb, down from initial concentrations of over 90 ppb.
- F New Extraction Wells - NO CHANGES:
 - i) Aerojet has constructed an extraction well screened in Layer C on the western edge of Sailor Bar Park as part of the proposed Area 1 extraction field. Locations of the other three proposed wells are more challenging due to lack of utility easements and may entail getting private property access agreements. Aerojet is working with Fair Oaks Water District in locating the wells.
 - ii) Aerojet is proposing a revision to its Area 1 extraction field and will no longer use AC5 to provide containment. Dedicated extraction wells will be constructed a bit farther to the west. We have not yet received the revised design proposal for the extraction well layout for Area 1 of the Western Groundwater Operable unit.
- G Well Destruction: NOTHING TO REPORT AT THIS TIME
- H Soil Gas Sampling:
 - i) No new field activities this period – Soil Vapor evaluation report was submitted.
- I Treatability Studies:
 - i) Line 04 - NO CHANGES. Treat study completed and report submitted showing that the HiPOx treatment unit successfully treated the high concentrations of TCE in the extracted water. The testing was also utilized to see what extraction rates are needed to control the groundwater around source areas. In this particular case, flowrates on the order of 7-10 gpm were sufficient to provide capture. This information will be useful in planning types and sizes of treatment systems that will be needed.
 - ii) Line 03 - NO CHANGES. System has been installed to evaluate the ability to bioremediate very high concentrations of VOCs, with perchlorate, in-situ below the water table. The system extracts and recharges groundwater in a recirculation loop. The groundwater is amended with an emulsified edible oil to provide an electron donor/food source to stimulate biological growth. The initial testing was stopped due to an unacceptable increase in water elevation in the injection well that did not allow the 7-10 gpm of flow that was needed. It appeared that the vegetable oil and/or excessive biological growth caused the

aquifer near the well to be plugged, reducing its ability to accept water. Hydrogen peroxide was added and that helped lower the water level in the well. Additional evaluations are being performed to see if the problem can be corrected. Looking at using soluble electron donor instead of edible oil.

- iii) Area 40: NO CHANGES EXCEPT AN INTERIM REPORT IS DUE IN MARCH 2008. Two permeable reactive barriers were installed across a portion of the shallow groundwater plume at Area 40. The first wall is an iron filings wall for the reduction of TCE. The second wall injects molasses in to stimulate bioremediation of perchlorate. Initial test results show that TCE is being reduced from 63,000 ppb to around 1.1 ppb in the wall and perchlorate is reduced from 40,000 to less than 4 ppb.

J Inactive Rancho Cordova Test Site - NO CHANGES IN FIELD WORK.

- i) Sigma Complex In-situ Bioremediation of Groundwater. NOTHING CHANGED. Boeing has been issued waste discharge requirements for an in-situ remediation of high concentrations on perchlorate in groundwater at the Sigma Complex. Boeing will be recirculating groundwater and adding an electron donor (citric acid) to stimulate biological growth and reduction of perchlorate. Initially the system will include one extraction and one recharge well, and several monitor wells. The system will be expanded after obtaining operational data from the initial wells to deal with the high concentrations of perchlorate (>4000 µg/L) in the upper groundwater.
- ii) EX-27, EX-20 and EX-21 are all operational and the water is being treated at the EX-25 treatment system. NOTHING CHANGED.
- iii) An in-situ perchlorate remediation system is being constructed for pilot testing at the Propellant Burn Area. A gaseous electron donor, hydrogen, along with propane and nitrogen will be used. Gases were injected in December to look at the radius of influence of the injection and extraction wells. Additional testing will commence following installation of some gravel to allow wintertime activities to take place.
- iv) Granite Construction has received necessary Rancho Cordova permits and will soon begin construction of facilities to allow processing and selling of aggregate from various clean portions of the IRCTS not being mined by Teichert. Granite will be using water from the treatment plant for dust control.
- v) EX-6 and EX-7 on Mather Field - east end of the runway - have been completed. Final pumping rates were determined to be 450 and 600 gpm, respectively. Will be treated at GET HB which is being expanded to have a treatment capacity of 4,000 gpm.

6. Source Operable Unit Overview: Gary Riley, EPA and Chris Fennessy, Aerojet

Gary Riley presented on the Source Area project status:

Overview

- ◆ Map of the Aerojet Site
- ◆ What are “Operable Units”, a.k.a. “OUs”
- ◆ The OUs at Aerojet
- ◆ How they are divided
- ◆ What’s going on in the Source OUs
- ◆ Where are we going

Operable Units in Superfund

- ◆ Definition
- ◆ Why they’re helpful
- ◆ Why Aerojet was divided into Ous
 - ◆ It’s a large site
 - ◆ Allows phased approach
 - ◆ Off-site groundwater issues

The Source OUs

- ◆ Boundary (42 source areas)
- ◆ Islands (66 source areas)
- ◆ Eastern (91 source areas)
- ◆ Central (94 source areas)
- ◆ Area 41 Soil and Groundwater (25 source areas)

CERCLA Process

Response Action Framework

- Discovery & Notification
- Assessment
- Selection of Remedy
- Cleanup
- Closeout

Remedial Action - Post-listing

- Remedial Investigation and Feasibility Study
- Record of Decision
- Remedial Design
- Remedial Action
- Operation and Maintenance

What's in an RI/FS Report?

- Objective is to characterize the nature and extent of contamination
- For source OUs, will include soil and groundwater
- Data are used to conduct a Human Health Risk Assessment and an Ecological Risk Assessment
- Risk provides basis for taking action
- Feasibility Study evaluates technologies

Overall Schedule

- ◆ The All of the source OUs are pre-RI/FS report
- ◆ Sampling and Analysis Plan (SAP) is prepared for each OU
- ◆ Field data (soil, groundwater, etc.) collection lasts about 2 years
- ◆ Data are used to prepare RI/FS report, including Risk Assessment

Current Status

- Boundary OU
 - Sampling complete
 - Draft RI/FS Due July 2008
- Islands OU
 - Sampling in progress
 - Groundwater - Completed Fall 2007
 - Soil and soil gas - Spring 2008
 - Treatability Studies in progress

Current Status

- Eastern OU
 - Draft SAP February 2008
 - Sampling late 2008 through 2009
- Central OU
 - Draft SAP June 2009
- Area 41
 - Draft SAP 2011

Treatability Studies

- Allow us to test cleanup methods at the site
- Current studies are in Islands OU
- Line 3
 - In-Situ Bioremediation
- Line 4
 - HiPO_x
- Area 40
 - Permeable Reactive Barrier

Where do we go from here?

- ◆ First RI/FS Report arrives July 2008
- ◆ Will describe contamination and potential cleanup methods for Boundary OU
- ◆ Opportunity for CAG Review of RI/FS
- ◆ Possible presentation of RI/FS to CAG
- ◆ After RI/FS, EPA will prepare Proposed Plan
- ◆ Process repeats for the other OUs

Beyond the RI/FS

- ◆ Remedial design prepared following ROD

Boundary OU	April 30, 2012
Island OU	July 31, 2012
Eastern OU	April 30, 2014
Central OU	April 30, 2017
Area 41 Soil & GW	July 31, 2017

Additional Information

Gary Riley

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7. Next Meeting

Next meeting: Wednesday, May 28, 2008, City Hall, 2729 Prospect Park Drive, Rancho Cordova, 7 p.m. to 9 p.m.