

1. Attendees

Janis Heple, Tim Murphy (Aerojet), Jackie Lane, Gary Riley, (EPA) , George Waegell, , Rick, Jimmy Spearow, Travis Anderson (Golden State Water Co.), Stephen Green, (SARA), Allen Tsao, Edward Thompson (resident), Alex MacDonald (CVRWQCB), Steve Nugent, Claudette Altamirano (Recorder, Weston Solutions, Inc.).

2. April minutes were approved with minor changes.

A discussion of trigger levels is reviewed later in these minutes.

3. Aerojet Community Updates: Tim Murphy, Aerojet

Mr. Murphy summarized the following:

- Fair Oaks – no new news.
- GET-LA (Ancil Hoffman) is complete and running. Treated water is lined up for Carmichael to use for irrigation of the golf course
- An open house for GET-LA is potentially scheduled for August 25. Aerojet will coordinate the open house with the agencies and the CAG meeting schedule.
- Bids for the pipeline under highway 50 (to GET on Mather field) are currently underway and anticipate that construction will begin in approximately three weeks.

4. General Aerojet Cleanup Overview: Alex MacDonald. RWQCB

(Handout provided by Alex MacDonald)

It was noted that Well 7 is set between two houses; one of the homes was robbed and to increase security the gate and fence are being moved. The well and related fencing was not an issue in the robbery but changes are being made to respond to neighbor security concerns.

Questions and answers provided at the end of the handout information.

Aerojet Activities – June 2010 CAG Meeting
(Bold Items shown on Figure)

- A **GET L-A.** Construction has been completed at the system is up and operating at approximately 600 gpm.
- B **GET KA: NO CHANGES.** Operating with all initially planned wells operating, including former **AC-7** (Georgetown). Flow is approximately 1700 gpm and could be

increased up to 1900 gpm. Golden State has been asked to run **AC-12** on a lead basis from now on and sampling by Aerojet will be on a monthly basis. It will be hooked up to treatment plant when concentrations of pollutants reach trigger levels. Aerojet is looking at having an “open house” for the public at **GET K-A** this summer.

- C **AC-6** will be provided with treatment this summer. Up to two months of testing will take place prior to use within the Golden State system. Discharge of water not into the distribution system is under Aerojet’s NPDES permit.
- D **AC-18** and **AC-23** have been provided with perchlorate IX units with and startup of the treatment systems will commence when perchlorate concentrations become greater. Similar process to AC-6 prior to use within the system. Currently the wells contain around 1-2 ppb perchlorate.
- E **GET H-A: NO CHANGES.** Working on getting two new extraction wells (White Rock Park and Coloma Road area) on north side of US 50 back to GET H. CALTRANS encroachment permit has been received to allow the work on the undercrossing of US 50 to begin. Should begin the undercrossing next week or so.
- F **GET B – NO CHANGES.** GET B is being expanded to accept transfer of **GET A** facility to the **GET B** location and to accept water from new extraction wells located in southern Zone 3 near Teichert. Pipeline from **GET A** to **GET B** is completed. Solar field adjacent to the facility has been completed and is already being expanded. Working on design for treatment of **GET A** at **GET B** – installation of UV system for **GET A** initially and pilot testing a UV/HiPox system. Two extraction wells north and east of Teichert are now hooked up to GET B. Two other wells will follow – south on **Teichert Facility** next to the Tracy property.
- G White Rock Road North Dump – **NO CHANGES.** 90% Design going out to bid to hook up two extraction wells and treat the water at the system at AKT-1. Water will be discharged to **Teichert** for their use or to Rebel Hill Ditch near **GET B** when Teichert does not need the water.
- H New Monitor Wells: No new monitor wells.
- I **Chettenham Well:** The Chettenham well remains off and the concentrations of perchlorate have remained around 3-4 ppb. Aerojet has reached an agreement with Cal-American Water Company concerning the Chettenham Well.
- J Aerojet and Sacramento County are continuing negotiations on water replacement issues. Meetings are occurring two times per week. City of Folsom, The Boeing Company and Golden State Water Company also participate in some or all of the meetings.

- K Perimeter Operable Unit - Excavation of PCB and metals contamination in **10D and 11D ditches** in the Administration Area has been completed. Aerojet submitted the closure report and it has been approved by the Agencies.
- L EPA is in the final stages of completing the draft Record of Decision for the Perimeter Groundwater Operable Unit (OU-5).
- M Treatability Studies:
- i) **Line 03**. NO CHANGES. Column studies on-going. Looking at various ways to bioremediate/degrade perchlorate and TCE.
 - ii) **HOGOUT** – Treatability study on-going to look at in-situ treatment of soils and groundwater has been completed. Aerojet is now looking at constructing and evaluating its “box of rocks” system.
- N NO CHANGES. Island OU Remedial Investigation Field Work: Second round of field work is complete. Assessing data for the RI/FS
- O Eastern Operable Unit – NO CHANGES all initial proposed sampling has been completed. Supplemental sampling is now on-going to fill some data gaps. Agencies reviewed supplemental work plan.
- P Central Operable Unit – NO CHANGES Draft sampling plan has arrived, agency review has been completed and comments are being assembled for transmittal to Aerojet.
- Q IRCTS:
- i) **Sigma Complex In-situ Bioremediation of Groundwater**. System has been operational for over a year. Boeing is adding an electron donor to remediate high concentrations on perchlorate in groundwater at the Sigma Complex. Boeing is recirculating groundwater and adding an electron donor (acetic acid) to stimulate biological growth and reduction of perchlorate. Initially the system will include one extraction and one recharge well, and several monitor wells. System is working very well. 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. Boeing looking at trying to enhance the flushing of perchlorate in the vadose zone upgradient of the system to decrease the length of operation of the treatment system.
 - ii) NO CHANGES. An in-situ perchlorate remediation system has been constructed for pilot testing at the **Propellant Burn Area**. A gaseous electron donor, hydrogen, along with propane and nitrogen is being used. The pilot test has been completed and we are awaiting the submittal of the results.

- iii) NO CHANGES. Additional soil sampling to define extent of perchlorate at the **Former GET F Sprayfield** has been completed.
- iv) **White Rock Road Dumps 1 and 2.** NO CHANGES These two old burn dumps will be combined at the Dump 2 location on the IRCTS. That area is slated to be a park in the Rio Del Oro development. Work may not begin this year depending on the time it takes for the construction bidding process to be completed.
- v) The permit for Boeing and the IRCTS treatment systems **GET H-B** and **SGSA GET** was renewed at the May 2010 meeting of the Regional Board.
- vi) Waste discharge requirements for modular biotreatment cells at **GET F Sprayfield and PBA** to remove perchlorate from extracted groundwater and discharge the effluent back to the ground for recharge were adopted at the May 2010 Regional Board meeting.

Gary Riley – Kevin is currently working on the response to the public comments for the Record of Decision (OU5)(ROD). The ROD for OU5 is expected by September.

Alex: Regarding the dumpsites on last month's CAG agenda; there are four dumps, two are overseen by DTSC and the Regional Board. (One on IRCTS and the County dump on the Aerojet site). The Water Board oversight – White Rock Road Dumps 3 and 4 have not yet been talked about.

Question (George): Is it safe to walk on the dump north of White Rock – he was concerned that there have been tire and garbage fires?

Answer (Alex): Yes, all the waste is underground.

Question (Jimmy): Three are a number of reports (about the Aerojet cleanup) are they available to look at?

Answer: Yes, they are available in the public repository. Copies can be obtained for the CAG.

Gary: Aerojet has submitted their response to agency comments for OU6/ they expect to have the remedial investigation/feasibility study (RI/FS) later this summer. There will be more opportunity for comment on this OU (as opposed to OU5) because the remedy is not as far along (i.e. early actions were substantial for OU5). There is lots of data, Aerojet does share the data and can send to Janis in Binders or CD. Need to discuss how to organize the Data for the CAG.

Question (Janis) – Can we have an introduction from the agencies regarding OU6 to start the discussion – perhaps at the next CAG meeting?

Answer – Yes.

Question (Allen): Also maybe the risk assessment methodology?

Answer (Alex & Gary): In general, can Aerojet (risk assessment consultants) present the general approach? Risk Assessments and approaches are exceedingly detailed. An appropriate discussion for an evening meeting would not be the detail but a general approach can be provided

Question (Jimmy): Which areas present a risk for groundwater and air? The public doesn't understand air risk from vapor intrusion very well.

Answer (Alex): That (vapor intrusion) was a major issue addressed in OU5.

(Gary) The methodology was worked out in OU5 which will help in addressing the issue at OU6.

Janis – The response to OU5 comments on the Proposed Plan is in EPA internal review – then it goes to other agencies for review?

Question (Jimmy): What are the cleanup goals?

Answer (Gary): The overall goals are the same for both OUs. The specific goals have to be appropriate for future use (i.e. different for residential vs. industrial uses). A proposed plan (outlines cleanup goals and remedy) will go out for a minimum 30 day public review. The public review time can be extended. Then the ROD includes responses to the comments. The final Boundary (OU6) RI/FS will be available for the CAG to review then the proposed plan will follow for comment.

Question: When will the RI/FS (OU6) be available?

Answer: Alex can post it on Geotracker after he receives it. The current plume maps are already on Geotracker (Water Board) site.

The web link to Geotracker for the general Aerojet site is included below:

https://geotracker.waterboards.ca.gov/search.asp?CMD=search&case_number=&business_name=Aerojet&main_street_name=&city=&zip=&county=&SITE_TYPE=SLIC&SITE_TYPE=LANDFILL&STATUS=&BRANCH=&CLOSURE_REVIEW_STATUS=&Search=Search

Gary – a caste study is being done by EPA on the solar panel project at Aerojet. This project is the largest example of a renewable energy project implemented on a Superfund site. Gary will send the link out when the study is posted on the website.

Question: Was a CEQA study done for this project.

Answer: Yes, a negative declaration was prepared.

Tim – Aerojet is Sacramento Municipal Utility District's (SMUD) largest customer. The solar plant replaces approximately one-third of the energy used for running the remediation of groundwater extraction and treatment.

Steve Nugent – General Manager Carmichael Water District – The district is in monitoring mode, making sure that all wells are within standards. Steve reviewed the history of the water district and contamination. In November 2003 EPA requested that Aerojet drill a test well in the Carmichael district. In 2004 they found contamination and the district entered into an agreement to have 1-3 GETS to protect groundwater. GET L-B was the first to be completed, next was GET K, and Ancil Hoffman(GET L-A) was the last. The common goal is to stop the contamination.

Question (Jimmy): What is the radius of influence (of the extraction well)?

Answer: (Travis) The system of extraction wells creates a barrier to contamination movement.

Alex – It depends on the characteristics of the well; there are many different characteristics that influence the radius of influence. In general we model, then design, test, and adjust as necessary for each well.

Steve – there is limited use of groundwater in the areas near contamination.

Question – How confident are you in controlling the NDMA movement towards Carmichael?

Steve – About 85% - we may need a new well in the future.

Alex – We will have Aerojet do an effectiveness evaluation.

Tim – Aerojet has installed approximately 3000 monitoring wells and done extensive research in groundwater flow and modeling.

Steve – the Carmichael groundwater level is 100-200 feet (below ground surface); at the Aerojet boundary groundwater level is 100 feet. The depth of the wells is where the contamination tends to be.

Kevin – Yes, because it is a nice productive lens.

Travis – Arden Cordova had 24 water production wells and now has six lead wells and five others. We lost our first wells to NDMA in 1998 (lost use of water production wells). Golden State's (GS) position has always been and Aerojet has supported this above an MCL or Notification Level, is that we shut wells down immediately when we saw something (contamination) The agreement (between GS and Aerojet) has been an action level of 6 ppt (NDMA) to ensure that appropriate actions are already in place should the level rise to 10 despite changing regulations. The most affected plume (OU3) covers the whole district.. At 10 ppt no water is allowed in the system but the district will normally never put water into the system above the level of 6 ppt. They have lots of data they are willing to share.

Question: What is the highest level of NDMA ever put in to the systems since 1998?

Answer – the highest was around 3.3 but will check that number.

Note California does not regulate NDMA (in drinking water)

Jimmy – The California Response level is 30 times the notification level.

Checking and summarizing previous discussion on the regulated levels of contaminants

Alex provided the following information after the meeting:

The Record of Decision for OU-3 requires:

1. Aerojet is obligated to replace a well when the concentration in the well is greater than 4 ppb for perchlorate at 2 ppt for NDMA. All of the other pollutants are at 2/3 of their respective MCLs. Most likely the well will be triggered by NDMA or perchlorate long before any of the other pollutants approaches the 2/3 MCL value.
2. The replacement must be made within 24-hours and the water purveyor can use the water provided by the Short Term Water Contingency Plan. This supply has been agreed to by Golden State and Aerojet. - This would utilize extra well capacity or surface water treatment plant capacity and the supply paid for by Aerojet.
3. Long-term replacement must be provided within 18 months of the triggering of the well.

These have been the trigger levels since July 2001.

The current public health goal for perchlorate is 6 ppb, for NDMA is 3 ppt and for TCE is 1.7 ppb.

(Note other agreements as discussed above between Aerojet and GS may also affect action levels.)

Janis – Regarding the minutes, does the group prefer them in one packet or with text and attachments?

Allen – would prefer one packet.

Claudette will send Jackie copies of the final minutes.

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5. Tentative next meeting date August 25th' 2010

2010 Proposed Schedule for the Aerojet CAG Meetings

October 27

December 22 – suggest changing to December 15 to avoid holiday interference.