

**FORMER NAS MOFFETT FIELD
RESTORATION ADVISORY BOARD
MOUNTAIN VIEW CITY HALL, FOURTH FLOOR
MOUNTAIN VIEW, CALIFORNIA 94041**

NOTE: A glossary is provided on the last page of these minutes.

Subject: RAB MEETING MINUTES

The Restoration Advisory Board (RAB) meeting for the former Naval Air Station (NAS) Moffett Field was held on Thursday, 09 Nov 2006, at Mountain View City Hall, Fourth Floor, Mountain View, Calif. Mr. Bob Moss, RAB community co-chair, opened the meeting at 7:10 p.m.

WELCOME

Mr. Moss introduced himself, welcomed everyone in attendance, and asked for self-introductions of those present. The Moffett Field RAB meeting was attended by:

RAB Members	Regulators	Navy	Consultants & Navy Support	NASA	Public & Other
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AGENDA REVIEW AND APPROVAL OF MINUTES

Mr. Moss reviewed the meeting agenda and asked for corrections to the 14 Sept 2006 meeting minutes. The meeting agenda and meeting minutes were approved without changes. Meeting minutes are posted on the project website at www.bracpmo.navy.mil/bracbases/california/moffett/.

DOCUMENTS FOR REVIEW

Sign-up sheets for the following documents were circulated during the meeting:

#	<u>DOCUMENT</u>	<u>APPROXIMATE SUBMITTAL DATE</u>
1	Draft Final Addendum to the Revised Final Station-Wide Feasibility Study Site 25	November 2006
2	Final Former Building 88 Investigation Report	November 2006
3	Final Site 22 Landfill Post-Construction Operations, Maintenance, and Monitoring Plan Addendum. (Waiting for agency approval of tech memo)	December 2006
4	Draft East-Side Aquifer Treatment System Evaluation Completion Report	December 2006
5	Draft Work Plan for Additional Fuel System Components at Building 29	December 2006
6	Final Groundwater Monitoring Well Installation and Sampling Report Orion Park Housing Area	January 2007
7	Site 29 (Hangar 1) Action Memorandum	TBA

REGULATORY UPDATE

Ms. Viola Cooper, U.S. Environmental Protection Agency (EPA) community involvement coordinator for the Middlefield-Ellis-Whisman (MEW) Superfund Site, provided an update on recent EPA activities.

- The Center for Public Environmental Oversight (CPEO) submitted letters of intent to apply for EPA's Technical Assistance Grant for MEW and Moffett Field superfund sites. EPA advertised CPEO's intent to apply for the grants in the San Jose *Mercury News* and Mountain View *Voice*. Letters of intent will be accepted through 15 Nov 2006. If other organizations do not have an interest in the grants, they will be awarded to CPEO.
- EPA is interviewing community members to gather data for updating the MEW Superfund Site community involvement plan. Community members interested in participating should contact Ms. Cooper. The community involvement plan will be available early winter 2007.

Mr. Devender Narala and Ms. Agnes Farres of the San Francisco Bay Regional Water Quality Control Board (Water Board) provided an update on recent Water Board activities.

- The Water Board provided comments to the Navy on the draft Former Building 88 Investigation Report, draft Groundwater Monitoring Well Installation and Sampling Report for Orion Park Housing Area, draft Site 14 South Progress Report, and draft Addendum to the Revised Final Station-Wide Feasibility Study for Site 25. Mr. Devender read some of Water Board's concerns on the draft Site 25 report.
- In September, the Water Board participated in a site inspection of the Site 27 Northern Channel with the California Department of Fish and Game, Navy, and National Aeronautics and Space Administration (NASA) to assess remediation and vegetation efforts. The low-growth re-vegetation of the channel banks is for erosion control, and the contractor excavating the area will "hydroseed" it.

Mr. Weissenborn provided an update on Site 27 activities.

- There are three confirmation sample locations on the southern bank where additional excavation and re-sampling will be done.
- One of the last parts of the project will be to reevaluate the size of the debris pile – it is larger than when the project started.
- The project is expected to finish within one month - the excavation and off-site transport will be done, although there may be road repair remaining on North Patrol Road.

HANGAR 1 REVISED EE/CA SCHEDULE

Mr. Weissenborn provided an update on the Hangar 1 revised Engineering Evaluation/Cost Analysis (EE/CA) schedule and the purpose for the revision.

The EE/CA is being revised because cost proposals received from contractors were not within the -30 percent to +50 percent range of the cost estimates presented in the EE/CA. (The cost proposals received were higher than the cost estimates in the EE/CA, but not as high as the approximate \$30 million projected by NASA.) The revised EE/CA will analyze the alternatives in more detail to more accurately estimate costs. The EE/CA also is being revised because implementability of each of the alternatives was not fully evaluated. The revised EE/CA is expected to be available for public comment in late spring or early summer 2007 and will undergo regulatory agency and public review.

Following are questions and comments about the presentation:

- Mr. Lenny Siegel, RAB member, asked how costs incurred by NASA will be presented. He said, since there is the possibility that it will be the community's responsibility to secure funds to preserve the hangar, the community would need accurate, total costs for the alternatives. Mr. Moss said the revised EE/CA should include identification, and the cost range, for additional costs that may be incurred by NASA and should include a cost range for making the hangar useable. Mr. Weissenborn said because the EE/CA is an environmental document, the cost estimates only relate to environmental response.

However, the Navy needs to determine how to include costs incurred outside environmental cleanup. Preparing a supplemental document, as suggested by RAB member Mr. Arthur Schwartz, is a possibility, but may not be possible if there is a lack of funding to produce the document.

- Mr. Peter Strauss, RAB member, asked who made the decision to conduct an EE/CA process for the environmental cleanup. Mr. Weissenborn said the Navy is the sole decision maker when conducting a removal action. Regulatory agencies are provided a 45-day notice and give an expedited review of applicable documents. Because the contamination at Hangar 1 is a known source, a remedial investigation (RI) report was not necessary.
- A community member asked why the estimated costs presented in the EE/CA did not accurately reflect implementation of the alternatives. Mr. Weissenborn said the details for implementing alternatives were not analyzed in developing the estimated costs presented in the EE/CA. The revised EE/CA should have a more realistic cost evaluation.
- Mr. Gabriel Diaconsescu, RAB member, asked if proximity will be evaluated as a factor for selecting an alternative, and if asbestos dust qualifies as a proximity factor. He asked if the contamination was hazardous to human health as well as the environment. Mr. Weissenborn said the hangar is a health hazard up close that is why it is closed; there is a visible dust layer of contamination inside the hangar, which has settled in the nooks and crannies over time. The Navy will need to determine a detailed cleanup method.
- In response to Mr. Moss' question about some of the alternatives not being fully evaluated in the EE/CA, Mr. Weissenborn said there will be 15 alternatives fully evaluated in the revision, including two alternatives in question that did not undergo the full evaluation.
- A community member asked if there could possibly be an infinite number of revisions to the EE/CA. Mr. Weissenborn said there would not be any further revisions. The Navy is working within the three to five-year lifespan of the hangar coating, so a cleanup action would need to be implemented soon. NASA monitors runoff from the hangar after storms, and rust is visible on the hangar surface near the top of the building. Mr. Moss explained the document review process, noting that cleanup must be completed by the end of 2008.
- Mr. Strauss asked the Navy to explore cleanup actions taken for the sister hangar in Akron, Ohio. Mr. Weissenborn said the Navy has been in close contact with the contractors; ultimately, the contractors at Akron are waiting to see what action will be taken for Hangar 1. Furthermore, the Akron hangar has funding available and there is a set plan for that hangar's future use.

Mr. Weissenborn concluded the presentation.

SUPPLEMENTAL RI/FS FOR VAPOR INTRUSION

Mr. Elie Haddad of Locus Technologies presented the supplemental remedial investigation/feasibility study (RI/FS) for vapor intrusion at MEW and Moffett Field sites. Mr. Haddad displayed an image of the trichloroethylene (TCE) plume of the shallow aquifer, where TCE was found in 1982. Remediation since then has decreased TCE levels by 75 percent.

Mr. Haddad presented an overview of the regulatory history of the site: in October 2002, EPA requested an evaluation of the groundwater to indoor air pathway; between 2003 and 2006, an investigation of vapor intrusion was conducted by the MEW Companies, NASA, and Navy, and voluntary remedial measures were implemented; in March 2006, EPA requested a supplemental RI/FS for vapor intrusion pathway to amend the existing record of decision; in May 2006, a work plan for the supplemental document was submitted to EPA.

Mr. Haddad displayed a conceptual model of the vapor intrusion pathway and types of samples. In the MEW area, there were more than 1,400 air samples collected from 30 commercial buildings and 16 homes. In the Moffett Field study area, there were more than 1,400 air samples collected from 9 commercial buildings and 42 homes in the Wescoat Housing Area. Background samples also were taken from as far as 1.5 miles outside the

study area. Mr. Haddad listed the chemicals analyzed in the air samples and said indoor air samples were compared to outdoor and background concentrations, short-term risk levels, and long-term exposure goals.

The supplemental RI report submitted to EPA on 14 Aug 2006 included a conceptual model, building-by-building presentation of sampling results in commercial and residential areas, analyses of sampling results, evaluation of implemented voluntary remedial measures, and findings. Mr. Haddad described the findings of the report.

The supplemental FS report was submitted to EPA on 16 Oct 2006 and included a summary of the RI report and its findings, identification and initial screening of technologies, development and detailed analyses of remedial alternatives, recommended alternatives, and general approach. Mr. Haddad listed the technologies analyzed in the FS report and described the criteria used to analyze the remedial alternatives. He listed the recommended alternatives and said the FS report is flexible in its alternatives because not all structures are alike and it is unknown how future structures will be constructed.

Mr. Haddad described the general approach for commercial buildings and residences, and the RI/FS schedule. EPA is currently reviewing the supplemental RI/FS documents submitted, and the documents will be finalized in winter 2007. Next, EPA will develop a proposed plan, which will be followed by a 30-day public review period. The record of decision would then be amended to include provisions for the vapor intrusion pathway - expected in summer 2007.

Following are questions and comments about the presentation:

- Mr. Strauss asked what the TCE plume would look like if mapped for 1 part per billion. Mr. Haddad said the TCE plume would not look much different than the image displayed during the presentation.
- Mr. Siegel commented that air samples are taken from structures and not outdoors because structures cause pressure that creates vapor intrusion.
- A community member asked who incurs the cost for maintaining long-term mitigation measures. Mr. Haddad said the costs are described in the FS report, but it has not been decided who will bear the cost.
- A community member asked about the failure rate of vapor barriers. Mr. Haddad said vapor barriers are installed by licensed contractors and subject to rigorous quality assurance. The barriers have a long lifespan and have warning signs posted to alert against breakage.
- Mr. Strauss asked why positive pressure was ruled out as a technology. Mr. Haddad said positive pressure has not been ruled out – if there is an air exchange rate of one per hour, there is positive pressure. Sometimes it is difficult to show positive pressure with some types of buildings.
- Mr. Siegel said this RI/FS study is important for the general understanding of vapor intrusion and shows that engineering controls work. However, it is unknown how long the technologies will work and how to monitor to ensure the controls are kept in place long-term. Mr. Siegel said it is important that the remedy include a long-term stewardship program to maintain effectiveness.
- Mr. Siegel also noted the ambient TCE level is 1.5 micrograms per cubic meter (μ/m^3), which is below the long-term exposure goal of $2.7 \mu/m^3$ for commercial structures but above the $1.0 \mu/m^3$ level used by EPA. He said there are unknown sources for this ambient contamination and there is a need to find ways to address the contamination in groundwater and TCE in outdoor air. Ms. Alana Lee of EPA said TCE concentrations of $0.2 \mu/m^3$ and $0.5 \mu/m^3$ were found in most areas, so EPA does not consider the contamination to be an ambient problem throughout the site.
- Mr. Siegel said the National Academy of Sciences recently released a report stating TCE is more hazardous than previously thought. He said it is possible there may be new standards for TCE contamination.
- Mr. Schwartz asked if there was any evidence of the plume degrading since its discovery and if the concentrations will continue to decrease; if so, does the report use current or future concentrations. Mr.

Haddad said TCE concentrations have been steadily decreasing, at least by 75 percent. It is safe to assume that the concentrations will continue to decrease over time. However, when selecting the alternative, current concentration values are used.

- A community member asked how long it would take to clean the groundwater in areas where there is a concentration of over 1,000 micrograms per liter (μL) of TCE. Mr. Haddad said the TCE cleanup standard is 5 μL and it would take many years to reach that cleanup standard. Mr. Strauss said he recalled the documents from 1989 projected a 109-year cleanup timeframe and asked if that projection is being exceeded. Mr. Haddad said it is undetermined at present.

Mr. Haddad concluded the presentation.

RESULTS OF FIELD WORK AT NORTHERN SOIL FILL AREAS

Mr. Don Chuck, NASA restoration project manager, presented results of field work at Area of Investigation (AOI) 14, focusing on polychlorinated biphenyls (PCBs). AOI 14 is located on the northern portion of NASA Ames Research Center and includes: Former Soil Fill Area, or “peninsula;” Building N217 Fill Area; and Building N217A Fill Area. Field work for AOI 14 took place from June 20 to June 23, 2006. There were 207 samples taken from 38 sampling locations. The samples were taken every two feet and borings were completed in natural soil. Compounds analyzed include PCBs (and Aroclor 1268), total DDT, lead and zinc, total petroleum hydrocarbons, total oil and grease, volatile organic compounds, and priority pollutant metals. PCB levels above the remediation level of 0.210 milligrams per kilogram (mg/kg) were found in the fill soil through a depth of 12 feet. Although Mr. Chuck did not provide results on other contaminants analyzed, he said they were also found in areas where PCBs were found. Next steps for the project include completing a report of findings, preparing a removal action workplan (equivalent to an FS report), and preparing a remedial design. Some cleanup alternatives considered include: excavation and off-site disposal; excavation and on-site treatment; and sediment cap.

Following are questions and comments about the presentation:

- In response to Mr. Strauss’ question of where the fill came from, Mr. Chuck said it is suspected that it came from the substation that moved when the wind tunnel was built.
- Mr. Strauss asked which PCBs were found. Mr. Chuck said 1268 was found in localized areas.
- Mr. Siegel asked why contamination values increased as depth increased and if it could be attributed to vertical migration. Mr. Chuck said the increasing contamination is probably not from vertical migration, but could have resulted from the multiple loads of fill. Mr. Siegel said this could mean that full removal of the sediment is required - if sampling was done every two feet and there were multiple loads of fill, there could be contamination in the unsampled layers.
- Mr. Siegel asked if global warming is taken into account for the cleanup alternatives. Mr. Strauss added that all activities done on a body of water should include global warming factors. Mr. Chuck said he did not know what NASA was doing about water rise and indicated that most of Moffett Field would be under water if water rose to the predicted level.

Mr. Chuck concluded the presentation.

RAB BUSINESS

RAB Related Announcements – There were no announcements made.

RAB Schedule - The next meeting is scheduled for Thursday, 11 Jan 2007, from 7 to 9:30 p.m., at Mountain View City Hall, Fourth Floor.

The RAB meeting schedule for 2007 is as follows:

- January 11, 2007
- March 8, 2007
- May 10, 2007
- July 12, 2007

- September 13, 2007
- November 8, 2007

Future RAB Topics – The following topics were identified as potential agenda items:

- Army presentation on Orion Park.
- Site 27 update.
- Hangar 1 revised EE/CA progress.
- NASA cleanup on Eastern Diked Marsh.
- Update on burrowing owl population.

Adjourn – The meeting was adjourned at 9:10 p.m. and Mr. Weissenborn thanked everyone for attending. Mr. Weissenborn can be contacted with any comments or questions:

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GLOSSARY OF TERMS USED IN THESE MINUTES

AOI – Area of Investigation

BRAC – Base Realignment and Closure

CPEO – Center for Public Environmental Oversight

EE/CA – Engineering evaluation/cost analysis

EPA – U.S. Environmental Protection Agency

MEW – Middlefield-Ellis-Whisman

µg/L – Micrograms per liter

µ/m³ – Micrograms per cubic meter

mg/kg – Milligrams per kilogram

NAS – Naval Air Station

NASA – National Aeronautics and Space Administration

PCBs – Polychlorinated biphenyls

RAB – Restoration Advisory Board

RI/FS – Remedial investigation/feasibility study

TCE – Trichloroethylene

Water Board – San Francisco Bay Regional Water Quality Control Board

***RAB meeting minutes are posted on the Navy's Environmental Web Page at:
<http://www.bracpmo.navy.mil/bracbases/california/moffett/>***