

**FORMER NAS MOFFETT FIELD
RESTORATION ADVISORY BOARD
MOUNTAIN VIEW CITY HALL, FOURTH FLOOR GALLERY
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, 17 November 2005 at the Mountain View City Hall, Fourth Floor Gallery, in Mountain View, California. Mr. Rick Weissenborn, the Base Realignment and Closure (BRAC) Environmental Coordinator for Moffett Field and RAB Co-Chair, opened the meeting at 7:20 p.m.

WELCOME

Mr. Weissenborn 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
11	6	3	4	2	12

Mr. Weissenborn indicated that copies of the agenda and meeting packets would be made available shortly. Mr. Bob Moss, RAB Community Co-Chair, informed the attendees of an additional agenda item, a presentation by Mr. David Mickunas from the U.S. Environmental Protection Agency (EPA) on air sampling at Orion Park.

DOCUMENTS FOR REVIEW

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

#	<u>DOCUMENT</u>	<u>APPROXIMATE SUBMITTAL DATE</u>
1	Site 25 Revised Draft Feasibility Study Report Addendum	October 2005
2	Building 88 Investigation Report	November 2005
3	Site 27 Draft Final Remedial Design	December 2005
4	Site 29 (Hangar 1) EE/CA Report	December 2005
5	Final Site 22 Landfill Post-Construction Operations, Maintenance, and Monitoring Plan Addendum	January 2006

APPROVAL OF MINUTES

The 15 September 2005 meeting minutes were approved without changes. Approved meeting minutes are posted on the project Web site at www.navybracpmo.org/bracbases/california/moffett/.

EPA AIR SAMPLING

Ms. Alana Lee, EPA Remedial Project Manager, provided background information on air sampling at Orion Park and introduced Mr. Mickunas from the Environmental Response Team (ERT) to present information on EPA's latest sampling efforts.

Mr. Mickunas showed the RAB a map of EPA air sampling locations which included 26 indoor and outdoor locations on Orion Park and five within National Aeronautics and Space Administration's (NASA) facilities. He noted that EPA sampled in unoccupied units at Orion Park as had the Navy.

Sampling was conducted using a Trace Atmospheric Gas Analyzer (TAGA) Mobile Laboratory, which offers state-of-the-art technology for real time measurement of compounds in the air, even at low levels. Using diagrammatic slides and a video clip, Mr. Mickunas demonstrated how TAGA detects and measures atmospheric chemicals.

A key part of the EPA sampling effort was to try to identify vapor intrusion pathways. Mr. Mickunas explained the process used for subslab sampling. Using graphs, he presented information on detections of dichloroethene (DCE), trichloroethene (TCE), and tetrachloroethene (PCE) in parts per billion (ppb) at buildings N210 and 20 at NASA, and units 728-B and 714-G at Orion Park. Mr. Mickunas concluded by saying that based on a comparison of chemical concentrations in indoor air, outdoor air, and subslab soil gas, it seems conclusive that elevated levels of TCE found indoors are coming from the sub-surface. Elevated levels of TCE found in certain units are not from outdoor ambient air.

The following questions and concerns followed the presentation:

- Mr. Peter Strauss, RAB member and technical advisor to the Silicon Valley Toxics Coalition (SVTC), asked about the detection capabilities of TAGA. Mr. Mickunas said that the detection limits can vary depending upon the ambient air and the number of chemicals being tested. In cleaner settings, it can be tweaked to 50-25 parts per trillion.
- In response to a question about the consistency of detections, Mr. Mickunas said it is hard to give a definite answer given the dynamics of air flow and the fact that they don't always get the opportunity to retest. However, in the big scheme of things, contamination seems to be coming from the sub-surface and is pretty consistent.
- A community member inquired about the conclusions of the study. It was noted that data collected clearly indicates there is an impact to indoor air. If the action level for TCE in air is 1 microgram/cubic meter ($\mu\text{g}/\text{m}^3$), then there are certainly spots with elevated concentrations that require remediation.
- Mr. Moss asked if the air spikes correspond with high chemical concentrations in groundwater. Mr. Mickunas responded that they were not able to correlate the spikes to lifestyle or ambient air issues, which leads them to believe the spikes are a result of soil gas vapor intrusion.

- RAB member Mr. Lenny Siegel commended EPA on conducting these tests and using technology such as TAGA. He emphasized the need to take action about the indoor air quality issues at Orion Park, since military families are continually being exposed to elevated levels of contaminants such as TCE.
- RAB member Ms. Jane Turnbull asked if generalizations about indoor air quality at Orion Park could be made from the units that were sampled. Ms. Lee responded that there are several units that have not been sampled and while it is hard to draw absolute generalizations, some elevated TCE levels found indoors were detected over high concentrations and it is clear there is soil gas vapor intrusion through preferred pathways at Orion Park. EPA is concerned about the elevated levels of TCE in indoor air and is looking to the Navy to conduct necessary remediation.
- Mr. Don Chuck from NASA stated that they are already taking preliminary steps to clean indoor air inside their buildings. The Heating, Ventilation, and Air Conditioning (HVAC) system in Building 15 is being fixed to eliminate vapors and NASA is looking into engineering controls for Building N210.
- A community member asked how all this affects the Mountain View area in general. Mr. Moss spoke briefly to the various contaminated sites in Santa Clara and the Bay Area. Ms. Lee informed the attendees that EPA hosted a community meeting in January 2003 to facilitate a consolidation of individual efforts at cleaning up sites in the Mountain View area – Moffett Field, Middlefield-Ellis-Whisman (MEW), GTE Government Systems site, and the JASCO Chemical Company site.
- Mr. Richard Eckert, RAB member, said that Orion Park residents should be informed of these latest findings and cleanup should be undertaken as a priority.
- In response to a question from a community member, Mr. Weissenborn provided a brief overview of the cleanup process for those new to RAB meetings. He stated that cleanup begins with site evaluation. Different sites on Moffett Field have different contaminants of concern. If an unacceptable risk is detected during site evaluation, the party responsible for contaminating the site conducts necessary remediation. For instance, an unacceptable risk was posed to ecological receptors from the contaminants on Site 27 - hence the Navy is cleaning it up to acceptable levels.

There are two things that often cause controversy during the environmental cleanup process. Firstly, mutual agreement between regulators and other stakeholders on the potentially responsible party (PRP). And secondly, the level to which the site needs to be cleaned up. Mr. Weissenborn also explained that the Navy has to work within funding appropriations by the U.S. Congress and has to justify its monetary expenditure on environmental cleanup. He added that projections indicate that by using pump and treat technology, cleaning the groundwater under Moffett Field could take over 300 years.

REGULATORY UPDATE

Ms. Lee informed the RAB that Ms. Lida Tan, EPA Remedial Project Manager for Hangar 1 and sites 25 and 27, is not on the Moffett team anymore. EPA Region IX is the lead region for EPA's China Initiative. She will be coordinating EPA Region IX's efforts. Mr. Christopher Cora is taking over oversight of Hangar 1, and site 25 and 27 project managers have yet to be identified.

Ms. Adriana Constantinescu, engineering geologist in the Department of Defense (DoD) section of the Regional Water Quality Control Board (Water Board), gave the following update on Water Board activities related to Moffett Field:

- Site 25: There was a stakeholders meeting on 28 September 2005 to discuss Site 25 issues, primarily the ambient level for polychlorinated biphenyls (PCBs). No consensus was reached and the issue will be addressed in the Revised Draft Feasibility Study due to be released in mid-December.
- Site 27: A stakeholders meeting was held on 16 November 2005 to discuss the proposed cleanup schedule for Site 27. More meetings will be held to resolve issues related to the schedule.

HANGAR 1 UPDATE

Mr. Weissenborn provided a brief update on Hangar 1. He said the Engineering Evaluation/Cost Analysis (EE/CA) is expected to be released in late January or early February of next year. The document studies alternatives for remediating Hangar 1. He also stated that cost, implementability, and effectiveness were being applied to evaluate the alternatives. Each alternative also provides avenues for historical mitigation to be in compliance with all Applicable or Relevant and Appropriate Requirements (ARARs), such as the National Historic Preservation Act (NHPA). For instance, in some of the coating alternatives, matching colors to the original color scheme is the historical mitigation component.

The Navy is also developing a Historic American Engineering Record (HAER) that documents the structure from a historical mitigation perspective using detailed photographs, information on how it was built, etc.

The following questions and concerns followed the Hangar 1 update:

- In response to Mr. Moss' question about how the six alternatives were selected, Mr. Weissenborn explained that the Navy started evaluation with a total of 13 alternatives. Amongst those, seven were discarded for not meeting one or more criteria. For example, a recoating alternative, while it is effective and implementable, only works for three to five years and hence does not comply with ARARs. The EE/CA will present the Navy's preferred alternative – however, that may differ from the final remedy, based on comments received. Following release and review of the EE/CA, the next step in the cleanup process at Hangar 1 will be an Action Memorandum.
- Mr. Strauss asked if the Navy could provide a description of the six alternatives. Mr. Weissenborn said that he would prefer to wait until the document is released. In the meantime the Navy wants to ensure that there is ongoing dialogue with the RAB and community on selection/elimination criteria.
- A community member asked about the public involvement schedule for the EE/CA. Mr. Weissenborn said that assuming the document is released around 01 February 2006, a public meeting will be held around 15 February 2006 and the public comment period will close around 02 March 2006. The comment period can be extended by 15 days upon request. A response to comments received at the public meeting and during the public comment period will be attached to the Action Memo, which will be released 15-30 days after the close of the comment period. Mr. Weissenborn added that the release date of the EE/CA will be advertised prior to release of the document and the public meeting will be

preceded by an open house to enable answering community questions and concerns one-on-one.

SOUTH OF HIGHWAY 101 GROUNDWATER SAMPLING DATA

Ms. Lee presented information on EPA's groundwater sampling investigation being conducted south of Orion Park in the vicinity of Highway 101 and Moffett Boulevard. EPA believes that while there are onsite sources of contamination at Orion Park, chemicals from external sources are also flowing onto Moffett Field. The goal of EPA's groundwater investigation is to determine the extent and possible sources of contamination in the study area. The contaminants of concern are TCE and its degradation products. The Navy had planned on conducting this offsite sampling effort; however, they were not able to use appropriated funding for offsite investigations. Hence, EPA is conducting the investigation in coordination with stakeholders such as the Navy and Army, and with monetary assistance from NASA.

Sampling was conducted in the fall. Due to limited funding, only 20 of the 38 proposed locations were sampled. Before sampling began, EPA hand delivered notification fliers to residents in the area. Ms. Lee presented slides identifying the sampling locations and the sequence in which they were sampled, both in the upper and lower aquifer zones. A handout with a summary of the sampling results was provided to the attendees. She added that the hot spots would need further investigation. EPA is in discussion with the Water Board and the Department of Toxic Substances Control and will keep the RAB informed of next steps.

The following questions and concerns were asked about the presentation:

- RAB member Steve Sprugasci asked if EPA is coordinating with the MEW companies on this groundwater investigation. Ms. Lee stated that the MEW companies weren't asked to participate since EPA is not aware of a link between the Orion Park and MEW plumes. RAB member Mr. James McClure added that the MEW companies conducted an investigation in the 1990s to the west, a third of the way over to Stevens Creek, and results indicated that the contamination has not gone over. They have been monitoring and pumping since then to prevent migration of contaminants.
- A community member said that historically there were many wells in that area and asked whether EPA has looked into them. Mr. Chuck pointed out that per the direction of the Santa Clara Valley Water District (SCVWD) all abandoned wells have to be demolished or removed.
- In response to a question by Mr. Siegel, Ms. Lee stated that the samples at Shenandoah housing were non-detects for TCE.
- There was a brief discussion on the origins of TCE. It was pointed out that it was used as a universal solvent for cleaning chips, aircraft parts, etc.

SITE 27 REMEDIAL DESIGN

Mr. Siegel suggested that the Site 27 presentation be postponed to the next meeting if that was okay with the RAB. Everyone concurred with this change in the agenda.

Ms. Libby Lucas, RAB member, said since Federal Emergency Management Agency (FEMA) headquarters are located at NASA, it is important to consider earthquake preparedness at Moffett Field. In that regard, the U.S. Army Corps should be encouraged to reinforce the levy at Site 27 while the remediation is being done. Mr. Weissenborn said that while it would be hard to get the

Army Corps involved this quickly (work on the site begins in January 2006), the Navy is going to reinforce the berm at Site 27 during remediation.

ORION PARK HOUSING GROUNDWATER SAMPLING DATA

Mr. Wilson Doctor, Navy Remedial Project Manager, presented information on groundwater sampling at Orion Park Housing. The Navy installed 11 monitoring wells at Orion Park in July 2005. The first round of sampling was conducted in August 2005 and the second round will take place the week of 05 December 2005. He showed the attendees a figure comparing Navy and EPA results from the August sampling for the same locations. Mr. Doctor noted that there was a discrepancy in the numbers listed for EPA detections and apologized for that. This was a split sampling effort and EPA and Navy used different labs to analyze the samples. There are some, although not significant, differences in Navy and EPA results. Data sets from the August and December sampling events will be compiled to derive conclusions and next steps.

The following questions and concerns followed Mr. Doctor's presentation:

- In response to a question by a community member on the highest concentration level detected, Mr. Doctor stated that 1200 micrograms/liter ($\mu\text{g/l}$) was detected in the lower A aquifer.
- A community member asked how the underground water flow and topography is characterized. Mr. Chuck gave a brief description of how lithology records are developed as borings are made and how characterization is done by connecting the points. He added that there is not 100 percent accuracy in these characterizations as there is always room for interpretation. Once monitoring wells are in place, they can also check elevation of water with regard to sea level. However, seasonal changes and the behavior of Stevens Creek also affect groundwater contours. Ms. Turnbull recommended a presentation be made on groundwater contour maps at the next meeting.
- RAB member Mr. Kevin Woodhouse, representing the city of Mountain View, asked about the next steps in the investigation. Mr. Chuck said that NASA is installing a sparge curtain to cut down the majority of the contamination coming onto NASA property. In response to Mr. Strauss' comment that a sparge curtain releases contamination from groundwater into the air, Mr. Chuck clarified that NASA will also be installing a soil vapor extraction unit to capture and treat vapors.
- Ms. Lee spoke briefly to EPA's position on the environmental work happening at Orion Park. She stated that EPA has sent a letter to the Navy concerning future steps, and is awaiting a response. Orion Park currently is not considered a site by the Navy – EPA would like the Navy, first and foremost, to designate that area as a site.
- Mr. Weissenborn stated that the Navy has been discussing environmental cleanup at Orion Park with the Army. They have asked the Army to either relinquish the property back to the Navy or take environmental responsibility. An Army response is expected early next year. The Navy had initially agreed to conduct two rounds of monitoring and then have the Army take over.
- Mr. Weissenborn added that TCE concentrations are fairly consistent over a wide area, which might indicate that the contamination has been in the area for quite some time. Concentrations of TCE are higher deeper in the aquifer and the reason for that is not clear. As mentioned earlier in today's meeting, there are likely sources on and off Orion

Park, however, the Navy can't, under fiscal law, use appropriated funding to identify sources upgradient of Orion Park.

RAB BUSINESS

RAB Schedule – The next meeting is scheduled for Thursday, 12 January 2006, from 7 to 9:15 p.m. at the Mountain View City Hall, Fourth Floor Gallery.

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

- Site 27 Remedial Design;
- Orion Park Sampling Results (if available);
- A community member requested information on projects that have successfully dealt with TCE as a contaminant;
- East-side Aquifer Treatment System (EATS) update in March;
- Mr. Weissenborn said that a few new RAB applications have been received - he suggested conducting a new member election at the next meeting;
- Ms. Turnbull recommended a presentation be made on groundwater contour maps;
- Mr. Siegel recommended having an educational presentation to answer some basic questions for people new to RAB meetings. Mr. Chuck said that he recently presented information on the region's hydrogeology and would be happy to share that with the RAB.

Adjourn – The meeting was adjourned at 9:30 p.m. and Mr. Weissenborn thanked everyone for attending.

Mr. Weissenborn can be contacted with any comments or questions:

Mr. Rick Weissenborn

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GLOSSARY OF TERMS USED IN THESE MINUTES

ARARs – Applicable or Relevant and Appropriate Requirements
BRAC – Base Realignment and Closure
DCE – dichloroethene
DoD – Department of Defense
EATS – East-side Aquifer Treatment System
EE/CA – Engineering Evaluation/Cost Analysis
EPA – U.S. Environmental Protection Agency
ERT – Environmental Response Team
FEMA – Federal Emergency Management Agency
HAER – Historic American Engineering Record
HVAC – Heating, Ventilation, and Air Conditioning
MEW – Middlefield-Ellis-Whisman
NAS – Naval Air Station
NASA – National Aeronautics and Space Administration
NHPA – National Historic Preservation Act
PCBs – polychlorinated biphenyls
PCE – tetrachloroethene
ppb – parts per billion
PRP – potentially responsible party
RAB – Restoration Advisory Board
Water Board – California Regional Water Quality Control Board, San Francisco Region
SCVWD – Santa Clara Valley Water District
SVTC – Silicon Valley Toxics Coalition
TAGA – Trace Atmospheric Gas Analyzer
TCE – trichloroethene
 $\mu\text{g/l}$ – microgram/liter
 $\mu\text{g/m}^3$ – microgram/cubic meter

***RAB meeting minutes are located on the Navy's Environmental Web Page at:
www.navybracpmo.org/bracbases/california/moffett/***