

**FORMER MARINE CORPS AIR STATION
TUSTIN RESTORATION ADVISORY BOARD MEETING
July 20, 2005
MEETING MINUTES**

The 70th Restoration Advisory Board (RAB) for the Marine Corps Air Station (MCAS) Tustin held its regular meeting on Wednesday, July 20, 2005, at the Clifton Miller Community Center in Tustin from 7:10 p.m. to 9:15 p.m. These minutes summarize the discussions and presentations from the RAB meeting.

WELCOME/INTRODUCTIONS/AGENDA REVIEW

Mr. Jerry Dunaway, Base Realignment and Closure (BRAC) Environmental Coordinator (BEC) and Navy RAB Co-Chair, opened the meeting and welcomed everyone. He explained recent adjustments with the BRAC team. He is now serving as the Acting Base Closure Manager until the return of Mr. Dean Gould from Iraq, and as the BEC for former Naval Station Mare Island and former Naval Training Center in San Diego. He introduced Ms. Jennifer Valenzia as the new Deputy Base Closure Manager who previously served as the BEC for former Naval Station Long Beach. Mr. Darren Newton was introduced as the incoming BEC for both former MCAS Tustin and former MCAS El Toro.

OLD BUSINESS

Approval of 4/20/05 RAB Meeting Minutes – Don Zweifel (MCAS Tustin RAB Co-Chair)

Mr. Zweifel asked for any changes or comments prior to approval of the 4/20/05 RAB meeting. Mr. Dana Ogdon, RAB member representing the city of Tustin, made a motion for the minutes to be approved. The motion was seconded and the minutes were then approved.

NEW BUSINESS

RAB Community Co-Chair Election

Mr. Dunaway asked if there were any parties interested in being the newest RAB Community Co-Chair. Mr. Adrian Morton, RAB member, nominated Mr. Don Zweifel. Mr. Fred Meier, RAB member, seconded the motion and Mr. Zweifel was reelected as the RAB Co-Chair for another one year term.

American Society of Civil Engineering (ASCE)/RAB Tour – August 18 at 4:00 p.m.

Mr. Dunaway announced that Mr. Meier is coordinating a tour of the base followed by a barbeque with ASCE, and RAB members are invited to participate in both activities. The tour will focus on sites where environmental cleanup is occurring. Mr. Dunaway said ASCE can accommodate up to 100 people and Mr. Meier has an informational flyer for those who are interested. The Navy will provide transportation, but RAB members will have to pay for the barbeque. Mr. Zweifel said site tours are very beneficial for

understanding the technical information presented at the RAB meetings. He suggested that RAB members and others participate in this tour.

Installation Restoration Program Status Update – Jerry Dunaway

Mr. Dunaway provided the following update of the MCAS Tustin Installation Restoration Program (IRP):

Operable Unit (OU) 1A IRP-13 South - 1,2,3-trichloropropane [TCP] groundwater plume) and OU-1B (IRP-3 and IRP-12 - trichloroethylene [TCE] groundwater plumes) – The Final Record of Decision (ROD) was signed on December 23, 2004. The soil removal and site restoration at OU-1A was completed in June 2005 and the report was issued in July 2005. Approximately 4,400 tons of TCP-contaminated soil was removed from the area at Severyns Road and Valencia. The Draft Remedial Design (RD) was submitted June 28, 2005. The groundwater treatment system enhancements are currently in design. The system with the enhancements will be operating in 2006. Property transfer will occur after the Operating Properly and Successful Report is concurred upon by the regulatory agencies and this is expected to occur in 2007.

Soil removal at Operable Unit 1B is scheduled for August to September 2005.

OU-4 (IRP-6, -5S(A), -11 [Areas B and C], 13W, MMS-04 [Area B] – OU-4 is split into OU-4A and OU-4B. The final OU-4A ROD for no further action was signed on January 3, 2005. The Draft Feasibility Study (FS) will be issued on August 23, 2005 and a presentation will be made at tonight's RAB meeting. The Navy will evaluate all the alternatives in the FS and later recommend the best alternative possible for OU-4B in the Proposed Plan. The Final ROD is scheduled for October 2006.

The Arsenic Area of Concern (AOC) Removal Action – The removal action addressed arsenic-contaminated soil at Buildings 190 and 251 and was completed in February 2005. The Final Closure Report was issued in June 2005. Property transfer is expected to take place later in 2005.

MTBE (methyl tert-butyl ether) Groundwater Plume (Underground Storage Tank [UST] Site 222) – The Navy proposed site cleanup goals for groundwater in January 2005. The revised cleanup plan was submitted in July 2005. MTBE-contaminated soil is the source of MTBE contamination in the groundwater. Excavation of this soil will eliminate the contamination source and enhance groundwater cleanup. Through June 2005, approximately 10,000 tons of soil have been excavated and hauled off-site and disposed of. The third phase of excavation is scheduled for completion in July 2005.

Findings of Suitability to Transfer (FOST) #7 –The Navy signed off on this FOST on May 20, 2005 with carve-out areas (CO) 3 and 7 and portions of CO-5.

FOST #8 – This FOST includes COs 1 and 4 and is planned for late 2005.

Discussion

Mr. Ogdon said that he thought the aerial photo would reflect the 13 parts per billion (ppb) MTBE plume as discussed at the previous RAB meeting. He also asked why the plume is so long compared to the previous plume that was shorter. Mr. Dunaway said the cleanup level set by regulatory agencies is 13 ppb. The map was not updated from the previous meeting, but the accurate plume size at this time would not be much different from the aerial photo presented at the April 20, 2005 RAB meeting. What the Navy proposed is that the cleanup level would significantly reduce the plume by a quarter of the current size. The proposed 13 ppb cleanup goal is being reviewed by the regulatory agencies at this time. Mr. Dunaway explained that the 13 ppb cleanup goal is for the 3rd WBZ, which is the area in the aquifer above the regional drinking water aquifer in Orange County. The Navy proposes a layered approach for the cleanup level. (Note: the paragraph on page 11 beginning with, "the Draft PCAP Addendum recommended..." explains the proposed cleanup goals for the MTBE in each WBZ.) This approach has been in discussion for about a year and the modeling has been done. At the next RAB meeting, October 19, 2005, the aerial map will reflect the current plume size. Mr. Marc Smits, Navy Remedial Project Manager (RPM) offered to show Mr. Ogdon the correct updated plume map that was documented in the latest quarterly monitoring report.

Regulatory Agency Comment Update - Regulatory Agency Representatives:

Ram Peddada, Project Manager, Cal/EPA Department of Toxic Substances Control (DTSC)

Mr. Peddada said the OU-1A Draft Soil Closure Report is currently being reviewed by DTSC and it should be an easy report to review. DTSC also received and is reviewing the 60-Percent Design document for the OU-1A/B groundwater treatment system that the Navy will be installing next year. After the agency reviews, the system design will be finalized at the end of 2005.

Patricia Hannon, Project Manager, Regional Water Quality Control Board (RWQCB)

Ms. Hannon said she is also reviewing the OU1A/1B documents Mr. Peddada discussed. She is also reviewing a report regarding the hydraulic lifts in Building 251. These lifts were used for raising up vehicles to perform maintenance and repairs. She received the Navy's proposal regarding the UST-222 amendment to set the MTBE cleanup goals for groundwater. The proposed cleanup goals for groundwater are based on the extensive modeling conducted and these goals are proposed to be the most protective of the aquifer. The proposed cleanup goals also address the effluent water that is discharged after treatment. Ms. Hannon said there may be new discharge limits issued in September 2005 that could reduce limits for total dissolved solids (TDS), 1,2,3-TCP, selenium, and total nitrogen (which includes nitrites, nitrates, ammonia, and organic and inorganic nitrogen).

Presentations:

Operable Unit (OU) 4B – Feasibility Study

Ms. Kyle Olewnik, Navy Remedial Project Manager (RPM), presented the Navy's current status with the Feasibility Study (FS). She said OU-4B has six TCE groundwater plumes,

three with “low-concentration” sites (IRP-11[Area B], IRP-13W, MMS-04 [Area B]) and three “moderate-concentration” sites (IRP-5S[a], IRP 6, Mingled Plume Area [DSS-01, DSS-02, MDA-02, MMS-05, ST-67]). The “low-concentration” sites had detections of 16 micrograms per liter (µg/L) of TCE or less. The three “moderate-concentration” sites have higher concentrations of TCE ranging from 45 to 193 µg/L. She noted that these numbers are not site wide and they are the maximum detections found at the site. The highest TCE detection was 11 µg/L in December 2004.

Ms. Olewnik said remediation technology screening was conducted as part of the FS. The lithology, hydrogeology, and groundwater quality were evaluated. She pointed out that the lithology controls the rate of contaminant migration into groundwater. The shallow aquifer consists of three WBZs above the regional aquifer. Elevated TDS and sulfate are present in groundwater at all the OU-4B sites. Also, there are anaerobic conditions present in the plumes.

The OU-4B Remedial Action Objectives are: prevent horizontal migration beyond the current Navy property boundaries; prevent use of shallow groundwater with concentrations of volatile organic compounds (VOCs) above cleanup goals; and implement appropriate remedial actions to facilitate transfer and reuse of areas actually or potentially impacted by the plumes.

The general categories of response actions include:

- No Action
- Land Use Controls (LUCs)
- Monitored Natural Attenuation (MNA)
- Hydraulic Containment
- In Situ* treatment
- Extraction
- Ex Situ* Treatment
- Disposal

Numerous technologies from these categories were evaluated and many were screened out, since they were not considered viable. In regards to the screening of remedial technologies and process options for groundwater, Mr. Dennis Parker, Bechtel, said they have been examining different technologies along with specific site factors to determine if certain technologies would be effective.

All OU-4B sites have the main portion of the contamination in the 1st WBZ and remedial alternatives will need to keep contamination from migrating. Mr. Parker said the screening of remedial technologies and process options for groundwater eliminated the following technologies:

Containment

- Vertical Impermeable Barriers, which includes sheet piling, grout curtains, and a slurry walls - high cost and low effectiveness
- Capping – minimal benefit

In Situ Treatments

- Cometabolic oxidation – not effective in reducing TCE
- Biosparging – not effective for chlorinated VOCs
- Oxygen Release Compound (ORC[®]) – not effective in reducing TCE

Physical Treatment

- Air sparging – not retained because of limited radius of influence
- Vapor Enhanced Extraction (VEE) – not retained based on IRP-3 VEE pilot test results

Ex Situ Treatment

- Biological treatment – not cost effective
- Physical treatment
 - Air stripping – not retained due to higher costs than granular activated carbon (GAC)
- Chemical Treatment
 - Ex Situ* Chemical Oxidation – not retained as VOCs can be removed more cost effectively by GAC
- Treated Groundwater Disposal
 - Off-site disposal
 - Publicly owned treatment works – low implementability

Mr. Parker said the Navy also evaluated technologies that could be retained for further evaluation:

In Situ Treatment

- Biological treatment
 - Enhanced anaerobic biodegradation
- Chemical treatment
 - In situ* chemical oxidation (ISCO)
 - Zero-Valent Iron (ZVI)

Extraction (Hydraulic Containment Wells)

- Effective GW extraction method, previously implemented at OU-1A

Ex Situ Treatment

- Physical treatment
 - Carbon adsorption (using GAC)
 - Filtration

Containment

- Hydraulic controls
 - Prevents migration of VOCs beyond carve-out boundaries

Treated Groundwater Disposal

- Groundwater discharge of treated groundwater
 - Storm Drain to Peters Canyon Channel

Mr. Zweifel asked about the alternatives, and Ms. Olewnik said all of the retained technologies are feasible and all alternatives in the FS need to be evaluated. She said all remedial alternatives will be evaluated against nine federally required criteria:

1. Overall Protection of Human Health and the Environment
2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)
3. Long-Term Effectiveness and Permanence
4. Reduction of Toxicity, Mobility, and Volume
5. Short-Term Effectiveness
6. Implementability
7. Cost
8. State Acceptance

9. Community Acceptance

She noted that these plumes are very low in concentration levels and implementation of the eventual remedial alternative is needed although it is not urgent. Mr. Adrian Morton, RAB member, asked about possible pumps and wells to be used, and Ms. Olewnik said since a remedy has not been selected yet, there is no way to know where pumps and wells for the remedy, if needed, would be located.

Mr. Parker said the Navy concluded there are four retained alternatives. Alternatives 1 through 3 would be retained for both the low- and moderate-concentration sites. Alternative 4 with four options was also retained for the moderate-concentration sites.

Alternative 1 – No Action

Alternative 2 – Monitored Natural Attenuation/LUCs

Alternative 3 – Hydraulic Containment/MNA/LUCs

Alternative 4 – *In Situ* Treatment (four options)

- **4a:** *In Situ* Anaerobic Bioremediation/MNA/LUCs
- **4b:** *In Situ* ZVI Injection/MNA/LUCs
- **4c:** ISCO/MNA/LUCs
- **4d:** Permeable Reactive Barrier/LUCs

Regarding implementability, Mr. Zweifel asked how is moderately implementable compared to easily implementable. Ms. Olewnik said the Navy will compare effectiveness, cost and, most importantly, available technology.

Mr. Parker said *Alternative 1*, No Action, has no components but evaluation is required under the National Oil and Hazardous Substances Pollution Contingency Plan as a baseline for comparing the effectiveness of the other alternatives.

Alternative 2, MNA/LUCs, has three components which include groundwater monitoring, LUCs, and periodic reviews. Alternative 2 is effective for low-concentration sites and MNA was also retained as a component of other remedial technologies for moderate-concentration sites. This option is readily implemented and has low capital and operation and maintenance (O&M) costs.

For *Alternative 3*, Hydraulic Containment/MNA/LUCs, the components include extraction well installation, construction of a conveyance system to the OU-1A and -1B GAC treatment system, discharge of treated water to the city of Tustin storm drains, LUCs, and performance monitoring and periodic reviews. This alternative will reduce VOC migration at low concentration sites, will be effective for moderate concentration sites by effectively controlling the groundwater flow beyond carve-out boundaries. It will also utilize the OU-1A and -1B Time Critical Removal Action (TCRA) remediation system which reduces capital costs. This alternative has low capital cost and moderate O&M costs.

Mr. Parker said for *Alternative 4*, *In Situ* treatment options, the components are composed of LUCs, performance monitoring and periodic reviews.

Alternative 4a, *In Situ* enhanced anaerobic biodegradation/MNA/LUCs, will help to reduce the time to achieve remediation goals. The effective permeability of the subsurface may be reduced due to the formation of precipitates. High sulfate concentrations in the groundwater will require higher concentrations of electron donor,

and this alternative will require monitoring downgradient of the plume. This alternative is moderately implementable, depending on the results of the pilot test and rebound effects. This alternative has moderate capital costs and low O&M costs.

Alternative 4b, In Situ ZVI Injection/MNA/LUCs, would be effective based on bench test results for OU-1B that indicate TCE could be effectively degraded by ZVI, but a pilot test is required. This alternative is expected to be moderately implementable for moderate-concentration sites pending results of the pilot test. Mr. Parker said a previous Navy study did not recommend ZVI. Capital costs are considered moderate with low O&M costs.

Alternative 4c, In Situ ISCO/MNA/LUCs, should be used at sites greater than 5000 µg/L VOCs. Mr. Parker said handling of reagents presents special safety and engineering requirements. He added that both bench- and pilot-scale studies would be required. Mr. Parker said this is moderately implementable for moderate-concentration sites. This alternative would have high capital costs with larger plumes, moderate capital costs at IRP-6, and low O&M costs for all sites.

Alternative 4d, permeable reactive wall with ZVI, may help to prevent VOCs from migrating beyond the carve-out boundaries or into San Joaquin Ditch. This alternative is moderately implementable and would be compatible with the site reuse options with no surface expression of barrier, but may have potential regulatory approval issues. The capital and O&M costs are both low.

The Navy is currently conducting fieldwork that will be documented in the FS to fill in data gaps. This involves the collection and evaluation of groundwater samples. Ms. Olewnik said the Navy is still evaluating risks and final cleanup goals, and the best ways to address the plumes.

The schedule for completing the FS is shown below:

Draft FS – August 23, 2005

Draft Final FS – December 23, 2005

Final FS – March 20, 2005.

Ms. Content Arnold, Navy Lead RPM, said that after the FS is completed a Proposed Plan fact sheet would be presented to the public which would recommend a preferred alternative. After the public comment period, the selected alternative is then documented in a Record of Decision.

Discussion

Mr. Zweifel asked the RAB members if anyone would be interested in having a subcommittee for the OU-4B FS. Mr. Dunaway said a sign-up sheet will be passed around for anyone interested.

Mr. Chris Crompton, RAB member representing the Orange County Environmental Management Agency, asked if Alternative 4 was screened out because of the low concentrations at OU-4B. Mr. Parker said the areas are very small, so the Navy did not think that these methods would be cost effective.

Mr. Ogdon said that cost is only one of the many alternatives to consider and asked if any of the suggested alternatives achieve the desired goal faster. Ms. Olewnik said the

amount of money versus the time would be disproportionate. Mr. Tim Heironimus, Bechtel, said that based on groundwater modeling performed at the site, cleanup could be complete within 3 to 4 years. Ms. Arnold said part of the screening process involves incorporating the contaminant concentrations into a computer model that estimates what concentration levels would be after cleanup has occurred. She said a lot more research has taken place than was presented here today.

Mr. Zweifel asked if the contractors or the Navy is leading towards a specific alternative. Ms. Olewnik said the Navy is still working through details and the FS does not suggest an alternative during this stage of Comprehensive Environmental Response and Compensation and Liability Act process, commonly called CERCLA. She said following the FS, the Navy would recommend an alternative in the Proposed Plan. Mr. Heironimus noted that this is a Draft FS and the Navy will still need to get RAB and regulatory agency comments prior to completing the Final FS.

Mr. Crompton asked if the Navy has established applicable, relevant and appropriate requirements (ARARs). Ms. Olewnik said the Navy is in the process of completing the evaluations needed for determining the ARARs.

Time Critical Removal Action (TCRA) System Update at OU-1A

Mr. Marc Smits, Navy RPM, said the TCRA system located at OU-1A was installed to keep contamination from migrating until the final remedy could be implemented. He added that the system has done its job at preventing contaminant migration. The Navy has made many adjustments and the system has been running almost non-stop, treating approximately 20 gallons per minute since October 2004. The system has treated 28.5 million gallons of water from January 2002 to July 2005 and has effectively contained the 1,2,3-TCP plume. The 1st Quarter 2005 Groundwater Progress Monitoring Report Data Summary issued in June 2005 indicated that concentrations of 1,2,3-TCP remain relatively stable.

He explained that data are collected on a quarterly basis. Compared to past monitoring rounds, data indicated the plumes are either stable or are lower in contaminant concentrations especially at the leading edge of the plume. The first-quarter monitoring results showed that the groundwater levels in the 1st WBZ increased 6 feet in most locations; however, the increased rain from December 2004 through March 2005 did not have a significant impact on the contaminant concentrations at OU-1A. With the heavier rains, the Navy has been able to pump out more water in these areas.

Mr. Smits said the Final 2004 Annual TCRA Performance Evaluation Report was issued in July 2005 (available in the Administrative Record file) to evaluate the progress of the system in containing the 1,2,3-TCP plume. The data also show that the TCP concentrations are stable in all three WBZ and that the TCRA system is effectively containing the contamination. The second-quarter sampling is scheduled for the last week of July 2005. Results will include impacts on groundwater levels and concentrations, if any, of the 2005 winter and spring rains at OU-1A.

The chart in the presentation handout showed the weekly flow rate for extraction of contaminated groundwater versus time. The spike between November 2003 and January 2004 is thought to be an anomaly. The chart shows that the extraction flow rate has been steady within the range of 150,000 gallons to 300,000 gallons each week.

Mr. Smits said the TCRA system performance chart shows two different data points, the influent concentrations and the total amount treated. This chart can be used to track when the Navy needs to replace the carbon treatment units. The system has been stable for the last couple of months.

Discussion

Mr. Zweifel asked if Ms. Hannon was satisfied with the TCRA system and Ms. Hannon confirmed that RWQCB is satisfied with the system's performance. Mr. Smits said the Navy adheres to RWQCB permits and the Navy will continue to demonstrate that the permit requirements are met. He added that this system will operate almost to the point when the final cleanup system starts up.

Soil Removal Actions and PCAP MTBE Treatment System

UST-222 Soil Removal Actions

Mr. Chris Johnson, Shaw Environmental, said his presentation will focus on the soil removal actions at Building 251, UST-222, and UST-29A. The Building 251 Draft Site Closure Report was submitted to the regulatory agencies in June 2005. From August to September 2005, the Navy will prepare the UST-222 Draft Soil Closure Report and UST 29-A Draft Report. Soil remediation field activities will be conducted for another week and backfilling and site restoration will be completed in August 2005.

Soil removal at UST-222 started in April 2005 with the removal of soil contaminated with total petroleum hydrocarbons (TPH) soil. Approximately 10,000 tons have been removed as of June 2005. Residual TPH, MTBE, and benzene soil contamination exist in several small areas, including two sidewall areas and three floor bottom areas.

TPH: 420 – 2,300 milligrams per kilogram (mg/kg)

MTBE: 4,000 – 15,000 micrograms per kilogram ($\mu\text{g}/\text{kg}$)

Benzene: 630 – 1,100 $\mu\text{g}/\text{kg}$.

These areas will be re-excavated and impacted soil will be transported off-site for thermal treatment.

The Navy started transporting groundwater from within the excavation source area for treatment at the Petroleum Corrective Action Program (PCAP) system towards the end of April 2005 and as of July 2005, about 500,000 gallons has been transported. Levels of contaminants in the groundwater are:

MTBE: 660 – 10,000 $\mu\text{g}/\text{L}$

Benzene: 2.8 – 350 $\mu\text{g}/\text{L}$

Tertiary butyl alcohol (TBA): 430 – 2,300 $\mu\text{g}/\text{L}$.

MTBE, benzene, and TBA concentrations in the excavation water have steadily decreased as the amount of the total groundwater removed has increased.

In the handout, the picture looking northeast is the excavation at its deepest point in the source area. Groundwater that is beginning to infiltrate the site is visible.

As part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Program, the Draft Soil Removal Report for OU-1A was submitted for regulatory agency review July 13, 2005.

Discussion

Mr. Zweifel asked if there will be restrictions on this land. Mr. Dunaway said the Navy is cleaning up the site to the highest cleanup goal (residential standards) so if the City wanted to build housing developments on this land, it could, however there could be restrictions on the use of groundwater. Mr. Ogdon said the land is designated for the South Orange County College District when the Navy cleanup is complete. However, even then there could be restrictions on the extraction of the groundwater. Mr. Dunaway confirmed that the cleanup would allow for the property to be used as a daycare facility. Mr. Bob Kopecky, RAB member representing the South Orange County College District, said the District will not be building anything that will require the extraction of groundwater.

Petroleum Corrective Action Program (PCAP) MTBE Treatment System

In the past two months, the PCAP system at UST-222 has been operating at approximately 94-percent efficiency. As of July 18, 2005, about 88 million gallons of MTBE-contaminated groundwater have been extracted, treated, and discharged. Extraction well samples collected on June 13, 2005, indicated a 50-percent reduction in MTBE concentrations in both source area extraction wells with MTBE concentrations ranging from 1,200 to 1,700 µg/L. Mr. Johnson said the excavation of MTBE-contaminated soil from the source area has resulted in a significant reduction in groundwater contamination.

National Pollutant Discharge Elimination System (NPDES) samples were collected on July 15, 2005 and results indicated concentrations in the effluent were below the discharge requirements. The influent MTBE concentration was 890 µg/L. Shaw Environmental collected a groundwater sample from monitoring well 222MW03S on July 5, 2005 to evaluate MTBE concentrations in the groundwater after soil excavation removal and treatment. The MTBE concentration was 2,400 µg/L and the spring 2005 sample concentration of MTBE was 44,300 µg/L. The summer 2005 sampling event will begin July 25, 2005.

Mr. Crompton asked if the 6-foot increase in groundwater levels could be the factor for the decrease in concentrations. Mr. Johnson said he did not see the rain as effective in diluting the concentrations. The March 2005 sampling results were in line with the higher concentrations. He said that the increased pumping rates of 30 percent could be a factor. The December 2005 sampling data will indicate how much more MTBE has been removed.

The Draft PCAP Addendum was submitted to the regulatory agencies on July 11, 2005. The Draft Addendum presented an evaluation of various treatment technologies using the MTBE decision tool program developed by Naval Facilities Engineering Command (NFEC) Alternative Restoration Technology Team. The program was given the various input parameters and the decision tool determined that pump-and-treat technologies were the most viable option for treating MTBE in groundwater at UST-222. Specifically, use of advanced oxidation (the current HiPOx system) was the most viable.

Extensive infiltration modeling was performed to determine the quantity of groundwater that could be applied, new groundwater flow paths, and groundwater capture zones. Infiltration modeling results indicated groundwater could be applied along the perimeter of the previous excavation, either by surface application or subsurface trenches and the total flow would not exceed 28,800 gallon per day, provided one additional extraction

well is installed within the source area. The duration of infiltration activities should not extend beyond 12 months.

The Draft PCAP Addendum recommended additional monitoring wells be used to enhance the lateral characterization of the plume, monitor changes in the plume size and shape, and address the elevated MTBE concentrations located downgradient of the source area. The proposed remediation goals for MTBE in the groundwater based on modeling activities are:

1st WBZ - 300 µg/L or ppb

2nd WBZ - 40 µg/L or ppb

3rd WBZ - 13 µg/L or ppb (allowable concentration in drinking water)

Mr. Johnson referred to the chart, in the handout, locations shown in red are the additional wells that extend to each WBZ to assist in determining the extent of the plume. There will also be wells on the leading edge of the plume.

Discussion

Ms. Mary Lynn Norby, RAB member, asked for a description of the effect the pump-and-treat system will have on the 3rd WBZ. Mr. Johnson said that with pump-and-treat the water is extracted through the shallow wells and pulled up in such a way that the water does not flow into the 2nd WBZ. The system is installed not only to stop horizontal migration, but to stop for vertical migration as well.

Mr. Ogdon asked how long will it be until the PCAP is no longer needed. Mr. Smits said the Navy is working at this time to determine a schedule, noting that this is the interim measure and the Navy and the regulatory agencies are working towards a final remedy. The final plan will be developed in fall 2005. Mr. Dunaway said the proposed MTBE cleanup goals still need to be approved by RWQCB in order to proceed. Regulatory agency comments on the proposed cleanup levels are due to the Navy in September 2005.

General Discussion

Mr. Zweifel asked if the Navy plans to do any maintenance on the historic southern hangar. Mr. Dunaway said there is a formal agreement with the State Historic Preservation Officer, but there are no requirements in the agreement that holds the Navy responsible for continuous maintenance of the southern hangar. He asked if Mr. Zweifel has documentation pertaining to hangar maintenance to please share it with the Navy and he will look into it.

Mr. Dunaway asked for a show of hands of those interested in participation in a more in-depth discussion on OU-4B, and a possible subcommittee. Those interested were Mr. Dana Ogdon, Ms. Mary Lynn Norby, Mr. Brendan Horgan, Mr. Adrian Morton, Mr. Dunaway and Mr. Zweifel. Mr. Dunaway said an e-mail will be sent out to get a more complete tally of interested individuals. He also said the Draft OU-4B FS Report could be put onto computer disk.

Future Topics and Meetings- Don Zweifel

UST-222 MTBE updates

Summary of the ASCE/RAB Tour

Ms. Hannon to share her comments on the remedy goals for MTBE
Ms. Hannon to share information regarding the development of the NPDES permits
Remedial Design Updates on OU-4B
City of Tustin Redevelopment Update

Meeting Evaluation- Jerry Dunaway

RAB members mentioned the following about the meeting:
the RAB meeting location was great
great presentations

Closing – Don Zweifel

The meeting was adjourned at 9:18 p.m.

List of Handouts Provided at the Meeting

RAB Meeting Agenda/Public Notice- July 20, 2005 RAB Meeting
Meeting minutes from the April 20, 2004 (69th) RAB Meeting
MCAS Tustin Environmental Program Status
Restoration Advisory Board Fact Sheet/Membership Application
MCAS Tustin- Where to Get More Information
MCAS Tustin Marine Corps/Navy Team Contact Information (phone, e-mail)
Internet Access- Environmental Web Sites list
For More Information (Administrative Record and Information Repository Locations)
MCAS Tustin Installation Restoration Program- Mailing List Coupon
MCAS Tustin Fact Sheet OU-1A and OU-1B, Remedial Design/Remedial Action; December 2004
Department of the Navy, "Policy for Conduction Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Statutory Five-Year Reviews, November 2001"
The Under Secretary of Defense, "Responsibility for Additional Environmental Cleanup after Transfer of Real Property"
Department of Defense, "A Guide to Establishing Institutional Controls at Closing Military Installations"
Presentation- Feasibility Study OU-4B Former MCAS Tustin
Presentation – TCRA System Update and a Program Update on Soil Removal Actions and the PCAP MTBE Treatment System

Copies of the meeting minutes and handouts provided at the July 20, 2005 RAB meeting on are available at the MCAS Tustin Information Repository located at the University of California, Irvine, Main Library, Government Publications Section. Library hours are 8:00 a.m. to 7:00 p.m. Monday through Thursday; 8:00 a.m. to 5:00 p.m. Friday and Saturday; and 1:00 p.m. to 5:00 p.m. on Sunday. It is recommended, however, that people call the library for confirmation of these hours as they may be modified during exam and holiday periods. The Government Publications Section may be reached at (949) 824-7362.

Minutes from previous RAB meetings can be found on the internet at a new Navy BRAC website: www.navybracpmo.org