MINUTES
NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
RESTORATION ADVISORY BOARD (RAB)
AND COMMUNITY MEETING
January 10, 2006

Participants:

Belk, Sean / Seal Beach Sun Newspaper
Carmody, Jack
Dudakis, Jason / Orange County Water District
Garrison, Kirsten / CH2M HILL
Hamparsumian, Hamlet / Tetra Tech EC, Inc.
Hannon, Patricia / Regional Water Quality Control Board, Santa Ana Region
Le, Si / Naval Facilities Engineering Command, Southwest (NAVFAC SW)
Losi, Mark / Tetra Tech EC, Inc.
Smith, Gregg / NAVWPSNTA Seal Beach Public Affairs Officer (PAO)
Stevens, Charles
Whittenberg, Lee / City of Seal Beach
Wong, Bryant / CH2M HILL

WELCOME

At 6:02 p.m., S. Le, NAVFAC SW Remedial Project Manager (RPM) began the meeting by welcoming the participants. S. Le noted that he would be leading the RAB meeting, as Pei-Fen Tamashiro, Navy Co-chair was absent due to the flu. He continued by introducing G. Smith, NAVWPNSTA Seal Beach Public Affairs Officer (PAO). RAB members were encouraged to direct any questions regarding environmental issues or the Installation Restoration (IR) Program to S. Le, G. Smith, or the IR Program contractors present at the meeting that evening. S. Le indicated that questions could also be directed to P. Tamashiro, who was expected to return to work the following week.

S. Le announced that one technical presentation would be presented by Tetra Tech EC, Inc. on Site 40, Concrete Pit and Gravel Area. He indicated that the technical presentation would be preceded by a status update on the ongoing IR Program, followed by an update on the IR Program schedule and budget.

PROJECT HIGHLIGHTS

The RAB meeting continued with a status update on the ongoing IR Program presented by S. Le.

The following sites were discussed:

- Site 42 – Auto Shop Sump/Waste Oil Tank; Sites 44/45 – Former Waste Otto Fuel Drum Storage; and Solid Waste Management Unit (SWMU) 57 – Paint Locker Area; Engineering Evaluation and Cost Analysis (EE/CA)
- Site 14 - Abandoned Leaking Gasoline Underground Storage Tank (UST), Additional Groundwater Delineation

- Site 70 - Research, Testing, and Evaluation (RT&E) Area; Groundwater Monitoring Program
- Site 70 Revised Feasibility Study (RFS), Proposed Plan (PP), and Record of Decision (ROD)
- Site 40 - Concrete/Pit Gravel Area, Remedial Design and Remedial Action
- Site 74 – Old Skeet Range, Tier II Ecological Risk Assessment
- Site 4 – Perimeter Road; Site 5 – Clean Fill Disposal Area; Site 6 – Explosives Burning Ground; and Site 7 – Station Landfill, Long-term Groundwater Monitoring Program

S. Le experienced technical difficulties with the Project Highlights slide presentation. Hard copies of the slide presentation were made available as a handout at the meeting and referenced during the presentation.

Questions and answers posed after the Project Highlights presentation are summarized below:

Slide 2

Question: This slide indicates that the Removal Action at Site 42, 44/45, and SWMU 57 was postponed due to the California gnatcatcher nesting season. I don't believe that the Station contains California gnatcatcher habitat. Is this reference correct?

Answer: This is an error in the slide. The reference to postponement of the removal action should have been attributed to the California clapper rail nesting season. I may have confused this reference to postponement of actions at NAVWPNSTA Seal Beach Detachment Fallbrook.

General

Question: Can you clarify the IR Program site that is being assessed for ecological risks to habitat and wildlife?

Answer: The potential harm caused by cleanup activities versus site-specific contaminants risks to ecological receptors are being examined at Site 74, the former skeet range site. The Navy completed the Tier II Ecological Risk Assessment at this site in 2004/2005, and is in the process of conducting an EE/CA and Net Environmental Benefit Analysis (NEBA). The EE/CA and NEBA are due to be completed in early 2007.

Question: Who completed the Tier II Ecological Risk Assessment at Site 74?

Answer: CH2M HILL, an environmental contractor to the Navy, completed the assessment. B. Wong, the Project Manager for this effort, is present here tonight. The Tier II Ecological Risk Assessment was finalized, reviewed, and received concurrence from the regulatory agencies in 2005.

Question: What was the goal of the assessment? Was it to determine the extent of contamination and potential effects on birds and wildlife?

Answer: Yes, testing was conducted to delineate the impacted areas of the site and develop appropriate target cleanup goals.

Question: Will the February 2006 RAB meeting include a presentation by the environmental contractor on the status of the groundwater monitoring and remediation activities specific to Site 70?

Answer: RAB meetings for the NAVWPNSTA IR Program occur every two months so the next RAB meeting is scheduled for March 2006. Geosyntec, the Navy's environmental contractor for Site 70, will present a status update on the groundwater monitoring and proposed remediation activities.

Slide 5

Question: What is the timing of the Site 70 public meeting related to completion of the Proposed Plan?

Answer: The public meeting will not occur until the Proposed Plan is completed. The public meeting will probably occur in April or May of 2006. A notice of the meeting occurrence will be placed in the Seal Beach Sun and Orange County Register newspapers.

S. Le continued the RAB meeting by indicating that he would present an update on the IR Program schedule and budget.

PRESENTATION – IR PROGRAM SCHEDULE AND BUDGET

S. Le proceeded with the presentation. Copies of the slide presentation were made available as a handout at the meeting. The question-and-answer period after the presentation are summarized below:

Slide 12

Question: You indicated that funding dollars will increase in fiscal years 2011 through 2015 as budgets are allocated. How will the extra funding for the IR Program be obtained? Will funding be obtained through grants?

Answer: The projections for the NAVWPSTA Seal Beach IR Program funding in fiscal years 2011 through 2015 represented in this slide are only an estimate of the potential Environmental Restoration Navy (ERN) Account allocation. The funding projections for the NAVWPNSTA Seal Beach IR Program are planned 2 years into the future, so it is not known at this time how the ERN budget will allocate the funds in those future years. The ERN Account provides all funding for the Navy's IR Program at NAVWPNSTA Seal Beach.

BREAK

S. Le announced there would be a 10-minute break followed by the technical presentation on Site 40, Concrete Pit and Gravel Area.

PRESENTATION – ENHANCED IN SITU BIOREMEDIATION OF CHLORINATED VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER AT SITE 40 (CONCRETE PIT AND GRAVEL AREA)

H. Hamparsumian and M. Losi proceeded with the presentation. Copies of the slide presentation were made available as a handout at the meeting. The following questions were posed after the presentation:

Slide 54

Question: At locations where concentrations of contaminants are highest, are these also the areas that are responding the least to bioaugmentation?

Answer: Not necessarily. Although there may be some wells where the data does seem to show low response in areas of higher contamination, there are other wells where we have high contaminant concentrations showing good response. Therefore, no simple correlation can be made, as we will see in the next few slides. A number of factors could be coming into play, including site hydrogeology. Because of the various factors that must be considered, we have identified potential optimization strategies for the remedial action.

General

Question: Are there other locations within the United States that are using a similar bioremediation strategy?

Answer: There are quite a few locations in the United States where a similar remediation strategy is being used. You have to have the right site conditions to apply this bioremediation strategy.

Question: Is the remediation strategy being implemented at Site 40 a patented process that requires fees be paid to the patent owner?

Answer: There are fees associated with the substrate (sodium lactate) being injected as part of the remediation strategy. However, the way we are applying the process, it is not patented and anyone can follow.

The sodium lactate is a special food grade lactate that is patented. There are a number of other substrates that are available: slow release, oil-based, alcohol-based, molasses. However, sodium lactate was determined to be the best substrate for Site 40.

Question: It seems that the application of this process at Site 40 and the payment of fees for the substrate is contributing more to "research and development" of the effectiveness of the process with less focus on the contamination cleanup goal for the site.

Answer: The strategy at Site 40 is not "research and development" at all. This is a proven process that was tested and determined to be suitable for the site conditions and contamination at Site 40.

Question:	How can others benefit from what we are learning at Site 40 using taxpayers' monies? It seems that there is a lot of money being spent on optimizing the process.
Answer:	The application strategy for Site 40 is specific to the site conditions and contamination issues at Site 40, so the exact same approach and optimization strategies could not necessarily be directly applied at other sites. There is no "silver bullet" application that can apply to all sites. However, general knowledge gained from the application strategy at Site 40 could be used to benefit remediation at other contaminated sites, so other Government cleanup efforts could benefit from the technical information gained at Site 40.
Question:	So the Navy isn't simply spending tax payer dollars to gain information for product improvement benefiting the patent owner?
Answer:	The Navy is identifying optimization strategies that will enhance the performance of a proven product (sodium lactate substrate) to overcome site-specific conditions pertaining to Site 40. The money contributed to optimizing the process at Site 40 could help facilitate cost-effective implementation of the process in other situations.
Comment by B. Wong:	The knowledge gained from Site 40 can and will be shared to benefit current and future DoD remediation efforts. For example, a technical paper on the site challenges and strategies has been presented at a Navy IR conference. These and other types of opportunities will be used to provide DoD site managers and their contractors knowledge and information so other efforts can benefit from this site-specific situation.
Comment by S. Le:	At the time the bioremediation process was being implemented at Site 40, NAVWPNSTA Seal Beach was the only Naval installation to use the type of bioaugmentation process. Now, the process is emerging as a more common practice with each new site where the application is implemented.
Question:	Have you personally worked on a project elsewhere where this same bioremediation strategy has been successful?

Response by M. Losi: Yes, this project is typical of many others I have worked on. For example, there was a project at a former naval facility in Long Beach where lactate was injected into the ground appropriate for the size, depth, and location of the groundwater plume. The tetrachloroethene (PCE) levels increased dramatically initially (opposite of what one would expect) before contaminant concentration data, geochemical parameters and microbial indicators showed biodegradation was occurring.

It was approximately 1 year before reductive dechlorination was significant, and the PCE levels came down. In addition, there were still a few remaining monitoring wells where the levels did not get down below the maximum contaminant levels (MCLs). However, bioaugmentation is typically not a fast process on a large scale and many projects typically incorporate monitoring natural attenuation as part of the last stage of the remediation strategy.

Comment by S. Le: Experts have said that as the levels of contamination reach 50 parts per billion (ppb) the process becomes inefficient, so natural attenuation at these contaminant levels is a legitimate remedy.

Question: What is the explanation for the unaffected contamination levels after the microbe injections?

Answer: As we've discussed, the data indicates that localized desorption and dispersion of the contaminants is occurring due to factors such as subsurface geological variations. The source of the contamination (degreasers) was not uniformly discharged into the ground; it was likely a drum was dumped here and another drum dumped there irregularly over a period of time. Upon contact with the groundwater, the contamination then moved with the groundwater flow. Therefore, the contamination is not equally distributed. In addition, the relatively high lactate injection volumes are likely contributing to fluctuating contaminant concentrations, so in some areas it is difficult to determine what is actually going on. With that said, there likely have been effects from the bioaugmentation, but they are difficult to measure at this time due to adsorption/dispersion-induced contaminant variation. Importantly, it is also likely that the microbes have not reached the monitoring wells yet, as a travel time of roughly 4 feet per month was observed in the pilot test [which was optimal], and many of the monitoring wells are located approximately 25 feet from injection wells. Thus, it is likely that not enough time has elapsed for effects to be measurable.

Comment by B. Wong: I would generally agree with your explanation for the unpredictability of the in-situ bioremediation due to the number of uncertainties involved, including subsurface geological variations and release timeframes. However, it would be misleading to characterize the source of the contamination was caused by "drums" of PCE being dumped. The estimated total mass of the dissolved chlorinated volatile organic compounds (CVOCs) is about 6 pounds (or about 1 gallon). So, it is more likely the source of contamination came from small leaks or spills.

M. Losi concurred with B. Wong that the discharges at Site 40 were likely minimal and clarified that he was providing a hypothetical example to illustrate how irregular discharge of contaminants over time can cause variations in contaminant distribution. The correction in the characterization of the contamination deposited at Site 40 is noted for the record in these minutes.

Question: Will the RAB be updated as the Navy moves forward with the decision-making process for optimization strategies at Site 40?

Answer: Yes, as the Navy progresses with the process, the RAB will be kept informed. A RAB update is anticipated in approximately six to seven months to report on the progress of the current recommendations and to present a status update for Site 40.

Question: You indicated that a measurement of 17 feet had occurred over the last 12 months. Is this a measurement of the reduction in the size of the groundwater contamination plume?

Answer: No, the 17-foot measurement is the distance that the microbes traveled over a 4-month period.

The important determination that we can make from this data is when we may expect to see the effects of the bioaugmentation. The monitoring wells are located 25 feet from the injection points. So, if the microbes have traveled about 17 feet in 4 months (a speed of approximately 4 feet per month), the effects cannot be expected to be measured for another month or two in the nearest down gradient monitoring wells.

COMMUNITY FORUM

S. Le asked if the RAB members had any questions regarding IR Program reports that had recently been released for review and comment. No questions were asked.

S. Le indicated that the next RAB meeting would be held in March 2006. He stated that two technical presentations would be presented to the RAB:

(1) Site 70 Groundwater Monitoring and Remediation Activities

(2) Site 42, 44/45, and SWMU 57 Removal Action Work Plan

A RAB member requested the specific date on which the March 2006 RAB meeting would occur. S. Le responded that the RAB meetings occur the second Tuesday of the month. G. Smith indicated that the Navy provides all past and future IR Program RAB meeting dates in the environmental cleanup area of the NAVWPNSTA Seal Beach web site. P. Tamashiro will be distributing a meeting agenda indicating the date, time, and location of the March 2006 RAB meeting. S. Le indicated that the meeting would begin at 6:00 p.m. However, the specific venue for the meeting was to be determined. L. Whittenberg indicated the City of Seal Beach would try to accommodate the meeting in the Council Chambers, if possible.

ADJOURNMENT

S. Le adjourned the meeting at approximately 8:00 p.m.

Note: This is a meeting summary, not an actual transcript.