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NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH  
RESTORATION ADVISORY BOARD (RAB)  
AND COMMUNITY MEETING  
April 10, 2002

Participants:

Bettencourt, Philip  
Carmody, Jack  
Clarke, Dean / Orange County Health Care Agency  
Foreman, Kim / Department of Toxic Substances Control (DTSC)  
Garrison, Kirsten / CH2M HILL  
Hohenadl, Eike / NAWPNSTA Seal Beach  
Le, Si / Southwest Division, Naval Facilities Engineering Command (SWDIV)  
Leibel, Katherine / DTSC  
Monroe, Bruce  
Schilling, Bob / Bechtel National, Inc.  
Smith, Gregg / NAVWPSNTA Seal Beach Public Affairs Officer (PAO)  
Tamashiro, Pei-Fen / NAVWPNSTA Seal Beach and RAB Navy Co-chair  
Vesely, Gene  
Willhite, Lindi / RAB Community Co-chair

WELCOME

At 7:05 p.m., P. Tamashiro, Navy Co-chair began the meeting by welcoming the participants and introducing L. Willhite, the Community Co-chair, and G. Smith, the Public Affairs Officer (PAO) for NAVWPNSTA Seal Beach.

Participants were encouraged to direct any community relations issues to P. Tamashiro or G. Smith, who can be contacted via telephone or e-mail. Community relations issues specific to the Installation Restoration Program (IRP) should be directed to P. Tamashiro and other general community relations issues should be directed to G. Smith. It was noted that contact information for P. Tamashiro and G. Smith is provided in the monthly IRP mailer.

P. Tamashiro announced that the meeting would proceed with the IRP Project Highlights presentation and Site 40 Update presentation, followed by the Community Forum discussion. P. Tamashiro introduced S. Le, the Remedial Project Manager (RPM) from SWDIV, who would be presenting a status update on the ongoing IRP.

PROJECT HIGHLIGHTS

S. Le provided the RAB with an overview of the progress at the NAVWPNSTA Seal Beach's IRP sites. The following sites were discussed:

- Site 5- Fill Disposal Area, Removal Action
- Site 7 - Station Landfill, Engineering Evaluation and Cost Analysis (EE/CA) and Action Memorandum (AM)
- Site 73 - Water Tower Area, EE/CA and AM

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- SWMU 24 - Demilitarization Facility, EE/CA and AM
  - Site 14 - Abandoned Leaking Gasoline Underground Storage Tank (UST), Baseline Groundwater Survey Investigation
  - Site 40 - Concrete/Pit Gravel Area and Site 70 - Research, Testing, and Evaluation (RT&E Area), Groundwater Monitoring Program
  - Site 40 and Site 70, Feasibility Study, Proposed Plan, and Record of Decision (ROD)
  - Site 40 and Site 70, Treatability/Pilot Study
  - Site 70, Pumping Test

Copies of the Project Highlights slide presentation were made available as handouts at the meeting. Questions and answers made immediately following the presentation are summarized below:

**Question:** Was the lactate bioremediation technology used previously at Site 40?

**Answer:** No.

**Question:** Do Sites 5, Fill Disposal Area and 14, Abandoned Leaking Gasoline UST, overlap?

**Answer:** These two sites are close, but they do not overlap.

**Question:** Does the contaminated groundwater plume associated with Site 14 extend out into the area where unexploded ordnance (UXO) was being removed at Site 5?

**Answer:** No, the contaminated groundwater plume ends very close to the railroad tracks.

#### PRESENTATION – SITE 40 UPDATE

P. Tamashiro introduced B. Schilling, the Contract Task Order (CTO) Leader for Site 40 from Bechtel National, Inc., who provided the RAB with an update on the Concrete Pit/Gravel Area (Site 40).

Copies of the slide presentation were made available as a handout at the meeting. An additional separate double-sided handout was also made available, which provided graphics of the Site 40 layout and indicated the extent of the contaminated groundwater plume.

The questions and answers posed during and after the Groundwater Monitoring Program portion of the presentation are summarized below:

#### Slide 31

**Question:** What is the depth of Well #8, located near the leading edge of the plume?

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**Answer:** I do not recall the exact depth of Well #8, however most wells were screened in the 20-35 foot below ground surface (bgs) zone.

**Question:** Did the City of Seal Beach have a domestic drinking water well along Westminster Boulevard?

**Answer:** Yes, and the Navy also had some drinking water wells located on the NAVWPNSTA Seal Beach at depths of approximately 650 feet bgs. These wells have either been abandoned or are no longer in use.

**Question:** Is there any regional or local program designed to inject water into the deep aquifer to reduce saltwater intrusion?

**Answer:** Yes, fresh water injection is occurring northwest of NAVWPNSTA Seal Beach along the Alamitos Barrier Project (ABP) which is designed to halt saltwater intrusion into the Alamitos Gap.

**Question:** Is the ABP in this area?

**Answer:** Yes, the ABP is in Long Beach.

### Slide 33

**Question:** Do you know from your research where the nearest drinking water aquifer is located in relation to the groundwater plume?

**Answer:** The Regional Water Quality Control Board (RWQCB) considers the groundwater beneath NAVWPNSTA Seal Beach to be potential source of drinking water, although drinking water aquifers are not tapped until the 600-800 foot bgs level and deeper. The contaminants at Site 40 are limited to the shallow water-bearing interval extending to a depth of approximately 66 feet bgs. No shallow aquifers on the NAVWPNSTA Seal Beach are used for drinking water purposes because salt content have made them unsuitable.

**Question:** Why was the National Wildlife Refuge (NWR) selected as the nearest downgradient receptor for Site 40?

**Answer:** It was a convenient location approximately 850 feet downgradient of the leading edge of the contaminated plume according to initial groundwater investigations. It should be noted that a persistent downward hydraulic gradient and the presence of a surficial clay layer in the substrate appears to preclude a flow path that reaches the surface water of the NWR.

**Question:** So in all actuality, no one is tapping into the shallow groundwater aquifers for drinking water purposes?

**Answer:** No, not at these shallow depths; the water at these depths are not suitable for drinking water purpose.

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BREAK

P. Tamashiro announced that there would be a 10-minute break and indicated that the Site 40 Update would recommence after the break and address the Pilot Test Program conducted at the site.

The questions and answers posed during and after the Pilot Test Program portion of the Site 40 Update presentation are summarized below:

**Slide 57**

**Question:** Was 4 parts per million (ppm) the highest level of tetrachloroethene (PCE) detected at Site 40?

**Answer:** Yes, approximately 4 ppm was the highest level of PCE detected from a hydropunch sample performed several years ago at Site 40. However, later tests detected less than 1 ppm (1,000 parts per billion (ppb)).

**Question:** So the 4 ppm detection was not a typical reading for the site?

**Answer:** It was not typical for the site in general, but was representative of the contaminant concentrations in the assumed source area west of Building 240 at the time, 4 to 5 years ago, when the groundwater contamination plume was initially characterized.

**Slide 61**

**Question:** Does injection of the 55,000 gallons of 3% sodium lactate into the groundwater measurably increase water levels?

**Answer:** Yes, injection of the sodium lactate did increase the water levels in the test area. The magnitude of the water level increase diminished rapidly with increasing distance from the injection well.

**Question:** Would mass displacement be synonymous with the occurrence of bioremediation?

**Answer:** No, the 55,000 gallons of sodium lactate was injected over a long period of time (7 months) so we do not expect to see significant displacement or mobilization of contaminants. Nevertheless, our evaluation will include a mass balance calculation to determine the extent of contaminant migration and/or dilution.

**Slide 63**

**Question:** So the Pilot Test remains open-ended until we analyze more of the test results?

**Answer:** Yes, or until more data can be obtained from laboratory analyses done on phospholipid fatty acids (PLFA) and deoxyribonucleic acid (DNA). These analyses would provide our experts with more information.

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**Question:** Are the microbes clearly working?

**Answer:** Yes, the parent product, PCE, has been biodegraded to trichloroethene (TCE) which has been biodegraded to dichloroethene (DCE). The DCE is less hazardous than the PCE and TCE. If nothing else, we have reduced risk by accomplishing some biodegradation.

**Question:** But the DCE will then be biodegraded and create vinyl chloride, which is not a desired product?

**Answer:** No, vinyl chloride is not a desired product, but we must create this product in order to achieve biodegradation to create harmless byproducts (i.e. carbon dioxide, chloride, and water). The biodegradation of vinyl chloride to harmless byproducts happens very quickly, so it is unlikely that we would see any buildup of vinyl chloride that would pose an increased risk.

**Comment by B. Schilling:** An alternative to relying upon the continuation of the reductive dechlorination pathway is to introduce additional microbes to bio-remediate specific contaminants. It may be the case that the appropriate microbes required to completely biodegrade the remaining contaminants are not present at the site. In this case, introduction of the appropriate microbes would be beneficial.

While DCE can be anaerobically biodegraded in the presence of the appropriate microbes, this contaminant can also be chemically oxidized under the proper aerobic conditions. This means that as the DCE comes in contact with the surrounding groundwater, the presence of oxygen in the groundwater regime will promote the chemical oxidation to vinyl chloride and then to harmless byproducts. Oxygen could also be added to the aquifer to promote this reaction if necessary.

**Question:** Is the lactate enhanced bioremediation process experimental or is it a well known process?

**Answer:** The process is well defined and has been used successfully at other sites. A large scale test was conducted at the Idaho National Engineering and Environmental Laboratory in Idaho Falls. The process was used as a remediation alternative to biodegrade the source area of a chlorinated solvent plume down to innocuous byproducts.

**Question:** What is the condition of the surface area at Site 40?

**Answer:** Some areas are covered with asphalt and concrete, while other areas such as the gravel area north of Building 240, remain unpaved.

**Question:** Has the surface area been remediated for contamination?

**Answer:** No remediation has been conducted on the surface area because contamination found in soil samples taken at Site 40 did not pose an unacceptable level of risk to human health or the environment.

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- Question:** All the contamination is in the groundwater?
- Answer:** Yes, contaminants which pose an unacceptable risk to human health are confined to the groundwater.
- Question:** So the Navy is not constrained in their ability to use the surface area at Site 40?
- Answer:** No they are not constrained.
- Question:** When was the Pilot Test conducted?
- Answer:** The sodium lactate injection began on July 31, 2001 and concluded on March 20, 2002.
- Question:** Was any information collected from the Pilot Test at Site 70 useful for activities at Site 40? Were there any parallels between the two sites?
- Answer:** No.

#### COMMUNITY FORUM

P. Tamashiro opened the Community Forum by soliciting questions from the RAB on any recently released reports. No questions were raised. P. Tamashiro reminded the RAB that any questions regarding IRP reports can be directed to her via telephone or e-mail.

P. Tamashiro regretfully announced that Andrew Masely, who recently retired and would be relocating out of the area, is resigning from the RAB. P. Tamashiro requested that those who know of potential RAB candidates contact L. Willhite or her. It was identified that acceptance of new RAB members is straightforward as long as there is no conflict of interest involved.

P. Tamashiro opened the Community Forum discussion to any other issues. The following issue was raised:

- Comment by K. Foreman:** S. Le . Le provided a good explanation of the acronyms used in the Project Highlights presentation, however it would be helpful if future Project Highlights presentations could contain defined acronyms, maybe at the bottom of the slide, to facilitate familiarity with what the acronyms mean.
- Response by P. Tamashiro:** We have identified that an acronym list would be helpful. We are in the process of developing one.
- Comment by K. Foreman:** That is a good idea, but would also be helpful to add the acronyms used in the Project Highlights presentation to the bottom of each slide.
- Response by P. Tamashiro:** Okay, we will undertake these two actions to improve the quality and understanding of RAB presentations.

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P. Tamashiro closed the Community Forum by reminding participants that the next RAB meeting would be held in June and that no May RAB meeting would be held. She announced that while the annual IRP Site Tour is typically held in June, it would be postponed until July when the weather is warmer and there are more daylight hours.

The June RAB meeting would be held on Wednesday, June 12, 2002 and the presentations would address two upcoming removal actions involving excavation and offsite disposal activities. P. Tamashiro noted that these presentations would be interesting to the RAB and further explained that one of the two sites involves a known archeological site.

#### ADJOURNMENT

P. Tamashiro concluded the meeting by thanking everyone for attending and reminding the attendees to please return their badges and sign-in before leaving. The meeting was adjourned at 8:45 p.m.