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RESTORATION ADVISORY BOARD MEETING MINUTES 14 JUNE 2012 NAS SOUTH
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Naval Air Station South Weymouth, MA Restoration Advisory Board (RAB) Meeting Minutes June 14, 2012

1. INTRODUCTIONS/ APPROVAL OF PRIOR MEETING MINUTES

John Goodrich, RAB facilitator, opened the meeting at approximately 7:00 PM. He requested that all attendees, including RAB members, regulators, and audience members, introduce themselves. He noted that the meeting agenda, handouts, and the sign-in sheet were available on the table at the back of the room. The sign-in sheet for the meeting is provided as Attachment A. J. Goodrich asked if everyone had time to read the minutes from both the January and April 2012 RAB meetings and if there were any comments. There were no comments.

J. Goodrich reviewed the guidelines for the meeting and reminded everyone that the focus of the meeting is cleanup issues. Any issues and/or comments not related to base cleanup will be noted and referred to the appropriate agency or organization. He reminded the participants when asking questions to wait to speak until they are acknowledged, to state their names and affiliations, and to speak clearly or into the microphone when they have questions.

He then reviewed the agenda for the meeting. The meeting agenda was slightly modified since Jim Young, SSTTDC, offered to give an update on infrastructure planning for the development of the base, including water and wastewater needs. Since this is not a RAB cleanup topic, the RAB meeting will first be formally closed and then J. Young will present the information. The meeting agenda and the action item tracking list are provided as Attachment B. In accordance with the agenda, the presentation and discussion would be followed by the updates and action items portion of the meeting. The minutes, agenda and action items for the meeting are posted on the BRAC PMO website: <http://www.bracpmo.navy.mil/>.

2. PRESENTATION

J. Goodrich introduced Dave Barney to give the presentation on the Feasibility Study (FS) for Building 81. The referenced slides are included in Attachment C.

D. Barney began the presentation on the Building 81 FS with a brief recap of prior RAB presentations about the Site. He noted that this is the third and last FS presentation for the three IR sites. The Building 81 Site was initially investigated as a waste oil tank removal project under the MCP, but was moved to

CERCLA when other contaminants (namely chlorinated solvents) were found. The objectives of the presentation are summarized on Slide 2; the location of the Site is shown on Slide 3. The primary objective of the FS was to develop and evaluate potential remedial alternatives to address unacceptable risks to human health and the environment posed by contaminants in groundwater.

The FS process includes identifying media and contaminants of concern (COCs), developing remedial action objectives and criteria, developing preliminary remediation goals (PRGs), identifying remedial technologies and developing alternatives, and then evaluating the remedial alternatives. Based on the RI, the medium of concern is groundwater (Slide 6). Soil (0-6 feet below ground surface) is not a medium of concern. The Site groundwater is MassDEP category GW-3 and is not considered a drinking water source area. There is no surface water at the Site. There is no ecological habitat or receptors at the Site so there was no ecological risk assessment performed as part of the RI. Slide 7 presents the extent of groundwater contamination at the Site and SSTDTC-established zoning districts. The future zoning of the Site is primarily a recreation district (RecD) and a small portion is part of the village center district (VCD) (mostly residential).

The COCs in groundwater are tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (DCE), vinyl chloride (VC), benzene, toluene, and naphthalene (Slide 6). The groundwater COCs were selected based on potential exposures to future building occupants via vapor intrusion and to future construction workers. The RI presented figures showing PCE concentrations contours for four different groundwater domains. The water table interval at the Site is defined as 5 to 8 feet below ground surface (bgs) and the highest PCE concentration contour was 50 µg/L. The deep overburden interval is defined as 12 to 20 feet bgs and the highest PCE concentration contour was 200 µg/L. The shallow bedrock (20-25 feet bgs) and deep bedrock (40-60+ feet bgs) PCE concentration contours were higher, both 1,000 µg/L. The highest PCE groundwater concentrations were in the area of the former tank grave, which is considered the release point.

The B81 Site RAOs are presented on Slide 7 and include the following:

- RAO No 1: Prevent the migration of COC-impacted groundwater
- RAO No. 2: Prevent exposure of construction workers to COCs at concentrations that pose unacceptable risk.
- RAO No. 3: Prevent exposure of potential building occupants to VOCs resulting from vapor intrusion into any future buildings on the Site at concentrations that pose unacceptable risk.
- RAO No. 4: Prevent human exposure to COCs in groundwater at concentrations that pose unacceptable risk.

Preliminary remediation goals, or PRGs, are presented on Slide 8. Risk based PRGs (cleanup goals) were developed for the following exposure scenarios: recreational exposure to VOCs via vapor intrusion into buildings; residential exposure to VOCs via vapor intrusion into buildings; and construction worker exposure via inhalation of VOCs.

The technologies and process options screened as part of the FS process are presented on Slide 9. These technologies included limited action, containment, removal, in-situ treatment, ex-situ treatment, and discharge/disposal. Containment is used to prevent migration of contaminants, in-situ technologies treat the groundwater in place, and removal and ex-situ processes treat the groundwater after it has been extracted. The most applicable and proven process options were retained and combined to form the remedial alternatives evaluated in detail in the FS. The process options retained include land use controls (LUCs) (institutional controls and engineering controls), monitoring (groundwater), natural attenuation (MNA), in-situ treatment (enhanced bioremediation, chemical oxidation, or mulch permeable reactive barriers (PRBs)/bio-barrier). See Slide 10.

Four alternatives were developed for detailed evaluation in the FS (Slide 11). The No Action alternative is required by CERCLA as a baseline for evaluating the other alternatives. Alternatives G-2 through G-4 build upon one another and all rely on MNA and LUCs. MNA would reduce the mass, toxicity, volume and/or concentration of COCs in the plume east of the PRBs (see alternative descriptions below). The LUCs would include a permanent restriction on the use of groundwater for production, supply, or irrigation uses; temporary restrictions to control vapor intrusion and construction worker exposure to COCs in groundwater until the RAOs are achieved, and performance of five-year reviews. Alternatives G-2 through G-4 all also include bio-barriers. In addition Alternative G-3 includes in-situ enhanced bioremediation, and G-4 replaces in-situ enhanced bioremediation with in-situ chemical oxidation. D. Barney noted that the Navy has recently received comments on the draft FS.

Alternative G-2 includes bio-barriers (PRBs), MNA, and LUCs (Slide 12). The LUCs would be put in place immediately to prevent exposures while the remedy is underway. The mulch bio-barriers would be installed in the overburden and bedrock east of Shea Memorial Drive. Injection of an emulsified oil substrate (EOS) and performance monitoring would be required as part of the bio-barrier portion of the remedy. The bio-barriers would need to be replenished with EOS during the treatment phase. The bio-barriers would be arranged in rows in the overburden and bedrock.

Alternative G-3 is similar to Alternative G-2, but includes in-situ enhanced bioremediation in the source areas (overburden and bedrock) to breakdown the COCs (Slide 13). Alternative G-4 is similar to G-3, but includes in-situ chemical oxidation (sodium and potassium permanganate) instead of enhanced bioremediation (Slide 14). Hydrogen peroxide was used during the ISCO pilot study at Building 81;

sodium and potassium permanganate should have a longer retention time and therefore a greater affect in oxidizing the COCs.

These alternatives were then evaluated individually against the criteria listed in the CERCLA regulations listed on Slide 15 (threshold, balancing, and state and community acceptance) and against each other. The alternatives must meet the threshold criteria. Slide 16 presents a chart summarizing the alternatives evaluation. The advantages/disadvantages of each alternative are discussed in detail in the FS.

The Draft FS was issued in April 2012 and the final FS is anticipated in late 2012. The Proposed Plan/Hearing is anticipated for early 2013 and the ROD is anticipated for early spring 2013.

M. Parsons asked if the fence that is in place at the Site will just stay in place. D. Barney responded that he didn't think that a fence was required for the alternatives, but they may need to protect the bio-barriers in some manner. That being said, there is no hurry to take the fence down. M. Parsons then asked if ISCO didn't work previously, what about doing a pilot test for both ISCO and enhanced bioremediation and see which works better. D. Barney stated that Building 82, which is further along may act as a pilot test for Building 81. ISCO has been used at the Site before, but the oxidant proposed for injection in Alternative G-4 is different and therefore it will behave differently. P. Call added that the proposed means of injecting the oxidant into the subsurface in the FS is different than in the ISCO pilot test, since there were problems in getting the oxidant to the target locations during the pilot test.

H. Welch asked if the pilot test shows that it still isn't working, what is the next option. D. Barney responded that they would look at a different treatment technology. H. Welch then asked if there would be a groundwater restriction. D. Barney stated that a groundwater restriction is necessary as a protective measure, but does nothing to address the underlying problem. The groundwater restriction will be a LUC, but there will need to be treatment technologies to reduce the toxicity and mobility of the contaminants.

M. Smart asked why a removal was not considered. D. Barney stated that since the groundwater concentrations increased with depth, removal was not very feasible. The prior tank removal and soil excavation removed most of the contamination in the soil, and removal of saturated soil at depth would require dewatering and management of water.

A. Malewicz asked why pump and treat was ruled out. D. Barney responded that it was not cost effective and would take a long time. The Navy's experience with pump and treat is that it works more for containment rather than cleanup.

M. Brennan asked if treating the different zoning areas (i.e. treating the residential area more vigorously) was considered. D. Barney stated that there was very little groundwater contamination in the VCD area

(residential area), so the focus for the alternatives was on treating the Building 81 footprint and preventing further migration of contamination into the VCD area.

M. Parsons asked how long will these cleanup alternatives take. D. Barney stated that it depends on the alternative and the depth of the contamination. The estimated time frames are shown below:

Groundwater Domain	Alt. G-2	Alt. G-3	Alt. G-4
Overburden Groundwater	35	15	24
Shallow Bedrock Groundwater	60	40	46
Deep Bedrock Groundwater	250	160	200

M. Parsons asked if there would be engineering controls. D. Barney responded that there would LUCs.

M. Parsons asked why there was a lack of bedrock wells to the southeast. D. Barney stated that the Navy doesn't agree but monitoring wells may be installed there as part of the monitoring portion of the remedy. The Navy believes the Site is sufficiently characterized to take the next steps, e.g., complete the FS and select a remedy.

H. Welch asked about combining a removal with other technologies and if that would speed up the process. D. Barney responded that removal of soil would remove some contamination, but removal is not feasible to deal with the contaminants in bedrock. The ISCO injections would go directly into the bedrock whether the soils above the bedrock are removed or not. The soil removal would not affect what is done in the bedrock. A. Malewicz added that since the contamination is deep and near the bedrock, removing the soils above doesn't change the outcome very much.

M. Bromberg asked if the contamination was only in the bedrock would there still be vapor intrusion concerns. D. Barney stated that if there is clean groundwater above the contaminated deeper groundwater there would not be a vapor intrusion issue. P. Call added that the overburden groundwater would be treated primarily to address the remedial objective for vapor intrusion. D. Chaffin stated that the overburden treatment has a much shorter timeframe, so that remedial objective would be addressed faster.

M. Parsons stated that their consultant commented that passive sub-slab vapor mitigation will be sufficient to protect human health to prevent vapors from getting into the building. D. Barney noted that even though the groundwater concentrations in the residential district do not exceed vapor intrusion criteria, the movement of vapors is not as predictable, so there would have to be a LUC.

A question was asked what a PRG is. D. Barney responded that PRG is the acronym for 'Preliminary Remediation Goal,' which becomes a Remedial Goal (RG) in the ROD.

3. UPDATES AND ACTION ITEMS

Action Items: There are no action items to address.

IR/EBS Program Site Update: The RAB update is on the back table.

The IR sites are all deep into the FS process and remedy selection.

The quarterly long-term monitoring report for the WGL was issued and the Remedial Action Completion Report (RACR) has been finalized. A post-restoration wetland inspection was performed and minor repairs are being performed this week. The minor repairs include areas where soil settled around the fence posts, erosion, rutting, and drainage structures (level spreaders). M. Bromberg asked about the area that is underwater. D. Barney stated that the repairs to the level spreaders should address this and eliminate any preferential water pathways.

Additional investigatory work was performed at the STP last year and the report has been submitted for review. This may be a topic for the August RAB meeting

Semi-annual LTM events were conducted at both the RDA and SL. A post-restoration wetland inspection was conducted at AOC 55C.

A Decision Document is being prepared for RIA 11 (AFFF) as part of the EBS process. The Decision Document will either recommend NFA or move to CERCLA.

The IOA project report is being developed. Further work at old Hangar 2 (RIA 111) is on the back burner due to resources, but a plan is being developed.

There are no new updates on the FOSTs.

J. Young stated that Steve Ivas participated in the wetland inspections (AOC 55C and WGL). Two SSTTDC public notices have recently been published. One notice concerns an application to the MassDEP regarding a sewer extension permit (Phase 1B) and requests an increase in flow to match the flow capacity that has been obtained under agreement with the Town of Weymouth. The 30-day public comment period began on June 8th. Documents can be obtained through the MassDEP (Jeff Gould). The second notice is regarding a hearing scheduled for June 18th dealing with a special permit application filed by LNR for earth removal activities at former Taxiway C. He added that any questions can be addressed during the separate SSTTDC infrastructure update after the RAB meeting.

Conclusion/Next Meeting

J. Goodrich wrapped up the meeting. The next RAB meeting will be the second Thursday in August (August 9, 2012). The meeting will again be held at the New England Wildlife Center, 500 Columbian St., Weymouth, MA. Suggested topics for the next meeting include:

- STP update

M. Parsons asked about SMP 11. D. Barney stated that the final Site Management Plan Revision¹² will be issued next month.